MILWAUKEE,

MILWAUKEE COUNTY, WISCONSIN.

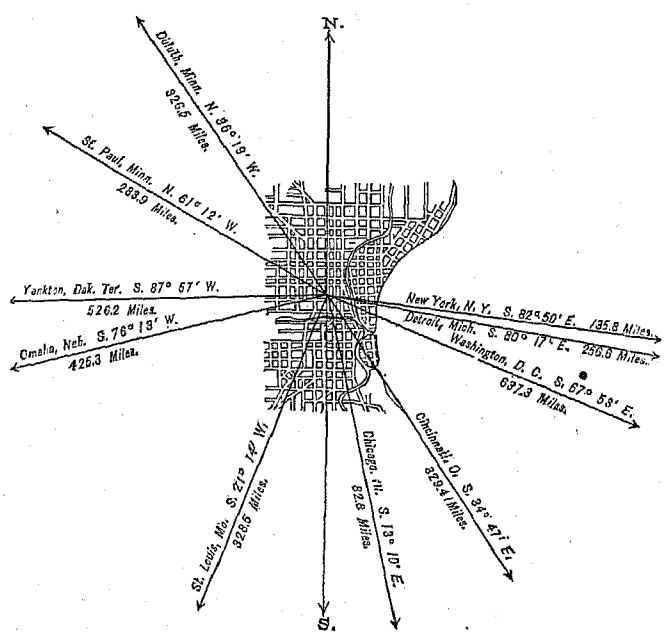
POPULATION

IN THE

AGGREGATE,

1840-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	1,712
1850	20,061
1860	45,246
1870	71,440
1880	115,587



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	57,475
Female	58,112
Native	69,514
Foreign-born	46,073
White	115,280
Colored	*307

* Including 6 Chinese.

Latitude: 43° 4′ North; Longitude: 88° (west from Greenwich); **Altitude: 580 to 755 feet.**

FINANCIAL CONDITION:

Total Valuation: $55,875,969; per capita: $483 00. Net Indebtedness: $2,160,289; per capita: $18 69. Tax per $100: $2 04.

HISTORICAL SKETCH.(a)

Those who have been reaping, and those who may continue to reap, benefits from the admirable location of Milwaukee as a commercial and manufacturing center, must render thanks to the Indians for choosing the site. The first civilized or semi-civilized people who visited Wisconsin for any but missionary purposes came solely to trade with the aborigines. They therefore sought no particular location; were not influenced in any degree by eligibility, soil, or prospective commercial advantages. They went wherever the Indians, with whom it was desired to establish commercial relations, had built their straw-like villages, no matter whether in desert or swamp. These nomadic traffickers were not in search of the best foundation for a city, site for a capital, or tract for an empire; their sole object and thought was to find the Indians. They found them at the mouth of the Mahn-ah-wauhee river, and there tarried. Hence came "Milwaukee."

a Prepared by Robert Luce, esq.

The natural attractions of the place in those days were not easily discernible. The streams that emptied into the bay at this point were sluggish, their mouths obstructed by wide sand-bars, their shores rank with obnoxious weeds; and the whole Menomonee valley was an uninviting swamp, alternately covered with water and weeds, and a little farther back with a tamarack forest. Therefore men prospecting for desirable locations would in all likelihood have passed this by for one of a half-dozen places on the lake shore, which would apparently more nearly answer their purpose; but the Indians were there.

These Indians were the remnants of several tribes, viz., the Pottawatomies, Winnebagoes, Chippewas, Menomonees, and a few Ottawas. The early traders knew them under the collective name of the "Milwachy Indians". It is settled, however, that this and the modern "Milwaukee" are corruptions of the old Pottawatomie term "Mahn-ah-wauh", which meant universal or common council grounds.

It is known that as early as 1757 at least, traders came to Milwaukee, as we may for convenience call the point, though not a house stood there, and that they sold rum, trinkets, beads, hatchets, powder, and firearms, taking pay in skins and furs. Later in the century this became more prominent as a trading-post; and for the first twelve or fifteen years in the present century there were a number of families residing here, and the place contained from 8 to 20 houses and trading-posts. Each trader had a number of hired men, who were generally unmarried, and spent much of their time in remote portions of the country collecting furs. At certain portions of the year, generally during the fall and winter, they were all at home. As Indian trading began to diminish in volume and profit the traders removed farther west or returned home to enjoy their wealth.

It is doubtful whether the honor of being the first white man to come here to settle—to found a home—belongs to Jean Baptiste Mirandeau or to Solomon Juneau. The latter, however, is generally credited as the first settler. The date of his coming was September 14, 1818; but not for some years after this was there any thing like a settlement here. In fact, no settlement was possible till the Indian title to the land was extinguished.

The Menomonees ceded to the United States their rights in the land north and east of the Milwaukee river, February 8, 1831, and after that date all this land was open to pre-emption or private entry. The land south of the river was claimed by the Pottawatomies, and the treaty of cession was not ratified until February 21, 1835. They had reserved the right to occupy the land three years longer. At Chicago, Mackinac, and Detroit, adventurers were waiting for these treaties to be concluded and the lands at Milwaukee to be opened to settlement. The first four of these pioneers arrived at the tamarack residence of Solomon Juneau on the 18th of November, 1833, and to them belongs the honor of being the founders of the first Anglo-Saxon settlement at Milwaukee. As soon as the next spring opened a comparatively large number of travelers, land-seekers, adventurers, and traders visited this place, but only about a dozen came to stay. The year 1835 witnessed a large influx of this class of people, and in 1836 still more of them came.

Milwaukee contained 7 structures built by Indian traders before the Anglo-Saxon began building in 1834; in that year 5 structures were completed. One of these, put up by Mr. Juneau, was the first frame building erected here. It stood on what a few years later became the corner of East Water and Wisconsin streets; and although its dimensions did not exceed 12 by 16 feet, it was used successively as a school-room, a justice's office, a recorder's office, a jail, a barber's shop, and then for several years as a gunsmith's shop.

In 1835 building began in earnest. A mill that had been put up in the previous summer began sawing oak and basswood lumber early in March. In this summer 16 structures were finished and 3 were got under way. In the summer of 1836 Milwaukee claimed over 500 inhabitants; about 60 frame buildings were completed, and 50 more were under contract. A lime-kiln and a brick-kiln were in active operation; and 3 saw-mills were sawing lumber for builders within 3 miles of the village. A land office was opened, a newspaper was started, the court-house was built, streets were laid out and graded, and money was plenty.

Then the financial crisis of 1837, that naturally resulted from the enormous speculations of the preceding years, spread ruin all over the land, and the Milwaukee speculators were not the least among the countless sufferers. Many a lot for which the owner had paid $500 or even $1,000 in 1836 was in 1837 or 1838 given in exchange for a barrel of pork or flour, or a suit of clothes. Many of the richest and most enterprising of the citizens, fearing if they remained longer they would lose every thing, left; those who remained were largely such as were too poor to do otherwise.

A considerable portion of what then constituted the village of Milwaukee had been bid off at the land sale at Green Bay in 1835 by Byron Kilbourn, George H. Walker, and Solomon Juneau. Walker purchased land in the vicinity of what is now Walker's Point; Kilbourn located his on the west side of the river, where his possessions were known as Kilbourntown; and Juneau purchased on the east side of the river, his possessions including the present court-house, park, and many acres of surrounding lots. At once there sprang into existence the two rival villages of Kilbourntown and Milwaukee.

At this time there were four roads leading away from this point—two diverging from the south side, one of which led to Chicago, the other to Fox river; one leading from the west side to Green Bay, and one proceeding up the peninsula to Port Washington. They very nearly followed the four principal Indian trails which the first Anglo-Saxon visitors found centering here, and had been chosen because these were seen to be the best routes. To get a road from Chicago to the west side, Kilbourn now built a bridge across the Menomonee and tapped the

Chicago road on the south side, about half a mile before it reached Walker's Point, where it crossed the Milwaukee by means of a ferry and terminated in Juneau's embryo city. The construction of this bridge greatly incensed the east-siders, since it gave easier access to the rival village than to the older site. The two villages were now formally organized, and the independence thereby declared aggravated the animosity already developed. One result of this jealousy will be seen as long as the city stands. Kilbourn made his survey in such manner as to prevent the streets upon the two sides from matching each other, always insisting that the west side did not want any communication with the east side, except by boats.

The east and west sides were consolidated by act of legislature approved March 11, 1839. Then for the first time the town of Milwaukee had a corporate existence.

A post-office had been established in Milwaukee in 1835, Juneau being the first postmaster. A two-horse mail coach between Milwaukee and Chicago began running, once a week, in March, 1836. The first vessel launched here was the schooner "Solomon Juneau", in the summer of 1836. The first newspaper issued here was the *Milwaukee Advertiser*, a six-column, large imperial sheet, which made its appearance July 14, 1836.

Two years passed before the town showed any signs of recovery from the blow, but when the great land sale for Milwaukee and the surrounding country began here, February 16, 1839, it became clear that prosperity and progress had received merely a temporary check. On the first day of this sale, although there was some delay in getting things into working order, over $50,000 was received for lands sold before sundown. At the end of seven days lands to the value of $260,000 had been disposed of, and March 19 the sales amounted to $600,000. The commissioner of public lands at Washington declared this to be the largest and most remarkable sale known to the department. Nine-tenths of the land at least was purchased by actual settlers; not a single speculator got an acre of claimed lands at this sale. The settlers united against the speculators, or "land-sharks", as they were called, with such effect that, though the land was offered to the highest bidder, not over half a section brought more than the minimum price set by the government, $1 25 per acre. Any "shark" who attempted to outbid a settler was treated to a cold-water bath until he agreed to desist.

In 1840, 132 of the citizens of the busy portion of the town were engaged in farming, 38 in navigation, 277 in commerce and trade, and 46 in professional occupations. The amount of maple sugar manufactured during the year ending June 1, 1840, was 13,900 pounds, and 6,625 cords of wood were sold.

Building was now resumed with almost as much energy as had been displayed before the panic. In 1841 and 1842 over 250 buildings were erected, and in the latter year there were 800 buildings standing in Milwaukee. Many of these, it is true, were temporary one-story frames, but there were many substantial buildings of neat workmanship. It was said that houses put up at that time brought from 40 to 50 per cent. on the cost, including the cost of the lot, as annual rent, such was the demand for shelter and homes. There were then 50 stores in the place, 8 large forwarding houses, 12 regular inns, 30 groceries, 1 furnace, 2 printing establishments, 30 attorneys, 8 physicians, and 8 ministers. The imports of the town had increased from $588,950 in 1835, to $1,805,277 in 1841; and the exports in the same time from $26,145 to $286,777.

Several grain warehouses had been erected in and previous to 1840. The first wheat sent from Milwaukee was shipped July 8, 1841, on the schooner "Illinois", and consisted of a cargo of 4,000 bushels. It took three days to load it; that amount can now be loaded in about fifteen minutes. The construction of the Red warehouse some years later was considered a great advance, for in it a single horse did the elevating; and still more of an advance was the Blue warehouse, where two horses were used. In the fall of 1848 the first steam elevator was completed.

Milwaukee had no natural water-power. The Milwaukee and Rock River canal was a scheme for connecting the waters of lake Michigan and Rock river. In 1838 Congress granted all the odd-numbered sections along the proposed route; this land the territory was to sell, devoting the proceeds to building the canal. Notwithstanding conflicting legislation and interests, contracts were let and considerable work was done. During the summer of 1842 a dam was constructed across the Milwaukee river, above the present Racine Street, or Humboldt Avenue, bridge. In December of that year this dam was closed up, and water was turned into the canal, which had been dug from near the present Chestnut Street bridge, in the second ward, to the dam. This gave a good water-power, and public attention was drawn from the canal to the water-power. Business at once became very brisk along this mile of canal. The next year saw-mills and factories were opened along it, and the completion of the rest of the canal was little thought of. Finally the time for completing it, ten years from June 18, 1838, elapsed, and all rights and privileges were thus forfeited; and afterward, by act of Congress, all unsold canal lands were given to the state of Wisconsin for educational purposes, after paying certain small debts from the proceeds of their sale. Thus the city and the state profited, the former getting a good dam and water-power, the latter many thousand acres of land, while the two counties through which the canal was to pass were the losers, since their settlement and development were greatly hindered by the failure of the enterprise.

The dam built was 480 feet long, 18 feet high, and 85 feet wide. It was a very solid and substantial piece of work. Lots on the canal sold at from $10 to $25 per linear foot, while water-privileges were to bring a perpetual rental of $75 per year for 100 cubic feet of water per minute. In 1849 there were 5 flouring-mills propelled by water. A steam flour-mill, the first in Milwaukee, had been built in 1847, with 17 run of stone, each run capable of turning out 80 to 100 barrels of flour per day, and consuming 7,000 bushels of wheat; many others have since been built.

The pioneer brewery in Milwaukee was erected in 1840 on the lake front at the foot of Huron street. The first firm soon built up a trade extending throughout the territory, and even reaching as far southward as Chicago. In the same year a brewery was started on the south side; others followed, and within a few years the brewery interests of Milwaukee assumed vast proportions. To-day the brewing of liquors is an industry of great importance.

The first settlement here was established about 2½ miles from the mouth of the river, although but one-half mile from the lake shore. There was a bar at the mouth of the river, but it was narrow, and there was but a small amount of drifting sand which might accumulate here by any agitation of the water. The water within the river was very deep, and the shores were bold; outside the bar the lake deepened, in the distance of 6 or 8 rods, to 10 or 12 feet of water, and then went off with a bold descent, with clay bottom, having no tendency to wash, drift, or change its position. For this reason it was thought that a harbor could easily be made.

In 1836 two lieutenants of the United States topographical engineer corps were ordered to make a survey here. They reported in favor of the "straight-cut" scheme, *i. e.*, of cutting through the narrow point that for some distance separates the river from the lake, and making a new mouth for the river, which would greatly shorten the distance from the village to the lake.

Meantime the commerce of the little town was rapidly growing. In 1835 but 2 steamers and 80 other vessels arrived here, while in 1836 there were 314 arrivals. In this latter year $45,000 was subscribed for the purpose of having a steamboat built to ply between this place and Chicago. She arrived in June, 1837, but was lost in the following November. In 1837 a steamboat was built here; it was a cheap scow of 50 tons burden, furnished with an engine of small power, and fit only for river work. It was the third craft of any kind constructed here, a schooner and a sloop having been built in the previous year.

The steamboat arrivals in 1839 were said to number 182, and in 1840, 174. The citizens were complaining loudly because the fine river front was practically unavailable on account of its inaccessibility. Communication with the lower lake ports in 1841 was so irregular that great inconvenience was experienced. The weary fight for federal help drove the merchants and vessel-owners to a more self-reliant course of action, and in 1843 the first pier at Milwaukee was constructed. It was placed at the foot of Huron street.

In the harbor appropriation bill passed in the spring of 1843, $30,000 was appropriated for Milwaukee. When the news reached the town the joy showed itself in a procession, a dinner, and a ball; but it did not last long, because it was soon clear that this appropriation had no reference to the survey of 1836, and that a new survey was necessary. The engineer who took charge reported against the "straight cut" and in favor of piers at the mouth of the river. The people, however, were unanimous for the straight cut, and a corporation loan of $15,000 was voted in April, 1844, for improving the straight cut.

Meantime government work had proceeded on the public improvement at the mouth of the river in the summer of 1843; piers were extended out nearly 1,000 feet. By the close of navigatign in the fall of that year, vessels of 6 feet draft were able to enter the river safely. In May, 1844, the brig "Virginia", drawing 7 feet of water, came up the river without meeting obstruction; and the harbor presented a busy scene, with numerous craft lying at the several docks. In this year the piers were extended out farther.

From time to time Congress appropriated comparatively small sums of money for the improvement of the old harbor, but in 1852 that body appropriated $15,000 for the improvement of the straight cut. Local energy once more took up the case, and the state legislature was induced to empower the city authorities to levy a direct tax upon the property of the citizens, this sum to be applied to improving the cut. Much time was necessarily lost in this proceeding, and it was 1855 before this sum was available. The whole was superintended by the United States engineer assigned here. The work was begun and prosecuted vigorously in 1856. Its total cost to the city from 1855 to 1870, inclusive, was $238,355 79. Piers were built 1,120 feet in length, and the channel was dredged for its full length and width to the depth of 12 feet. No further steps for this improvement were taken by the United States government till 1866, when $48,283 17 was appropriated. In 1870, $40,000 more, and in 1871, $38,000 more were given by Congress. Other smaller sums have been expended here from time to time. Since these improvements Milwaukee has had a superior harbor.

As Milwaukee gradually developed, better land as well as lake communication with the older settlements was necessary. Mails were sent overland. The early roads were but openings through timber or over prairie, with logs laid across swamps and marshes, or rudely thrown over small and unfordable streams. The early files of Milwaukee newspapers contain weekly complaints of the non-arrival on time of through stages; but these stages were always loaded.

The first plank-road company was chartered in 1846; in the next few years a number of roads were built. In 1854 there were seven of them tributary to Milwaukee, with a total length finished of 139 miles. On the building of railroads, plank-roads, except for local purposes, ceased to be in demand. The first railroad company was chartered in 1847. Under the name of the "Milwaukee and Mississippi Railroad Company" it ran its first train in February, 1851, from Milwaukee to Waukesha. This was the first piece of railway built in Wisconsin. The advent of the railroad gave even greater prosperity to Milwaukee.

Resuming the thread of current events in Milwaukee, we find that in the spring of 1843 the small-pox in an alarming form made its appearance here. So rapidly did it spread that a pest-house was established. Three years

later, in the fall of 1846, the pest-house was again called into requisition, and as the disease continued its virulence in the spring of 1847, the common council passed an ordinance rendering vaccination imperative. A committee was also appointed to make house-to-house inspections. By these means the spread of the disease was checked.

The jealousy between the east and west sides, already mentioned, found its vent in a quarrel over the means of communication between the two. They disputed over the building of bridges, and after these had been built the division of the cost of the maintenance furnished a pretext for continuing the quarrel. It finally culminated in a riot, which took place May 8, 1845, when the west-siders tore down the west end of the Chestnut Street bridge, and rendered the Oneida Street bridge impassable. This party desired a change in the location of the bridges, and the east-ward people had merely opposed this; but now the latter conceived a violent hatred of all bridges. This resulted, May 28, in another riot, in which the east-siders destroyed the draw of the Springfield Street bridge and tore down the bridge over the Menomonee.

The bridge matter being relegated to separate action, a city charter was passed by the legislature, which the village ratified. This act was approved on the 31st of January, 1846.

The new municipality was divided into 5 wards, a number which remained constant for the next six years, there being in that time no substantial changes in the corporate limits of the city. But after 1852, up to 1856, there seemed to be a general outward movement of the young city, and it threw out its arms so vigorously that it boasted 8 wards. In 1857 three of the wards increased in size toward the west, and the west side added another ward. The next ward created was in 1872. In 1873 two more were added, and in 1874 another and the last accession was made.

The elective officers of the new city were mayor, treasurer, marshal, and police justice for the city, and 3 aldermen, 1 assessor, 1 constable, and 1 justice of the peace for each ward. All other officers were chosen by the common council. In 1852 the office of city attorney was made elective, and in the same year that of city controller came into existence. The office of city marshal was abolished and that of chief of police was created in 1858. In the next year a municipal court, with a judge elected for six years, was substituted for the police justice. In 1858 the common council was divided into two distinct bodies—the board of councillors, consisting of two persons from each ward, and the board of aldermen, one from each ward. During 1859 the first superintendent of city schools went into office. It was not until 1869 that the city work, surveying, engineering, and street-inspecting were fairly concentrated. In that year a city engineer was first appointed, in conjunction with the board of public works. Up to 1878 the mayor appointed a board of health, consisting of 5 aldermen, to take charge of the sanitary condition of the city. This was the nucleus in 1878 for a separate department of the city government, whose head is the health commissioner.

The first record of any sanitary action taken by the city authorities was an ordinance passed by the common council, June 29, 1846, whereby 5 physicians were appointed, being one for each ward, to attend the poor of their respective districts. The board of health was established in August of that year.

In consequence of the defeat of the republican element in Germany in 1848, the number of emigrants from that source to Milwaukee was very large; and the failure of the potato crop in Ireland in 1847, and the penal measures adopted by the British government in that and succeeding years, caused a great influx of immigrants.

For many months previous to the spring of 1849, before the epidemic reached Milwaukee, cholera appeared in San Antonio, New Orleans, Saint Louis, and Cincinnati, gradually coming north. The public thoroughfares were ordered to be cleansed of impurities. The city authorities took the greatest precautions against the spread of the epidemic, both before it broke out and after its first appearance. It broke out in all portions of the city and in the country adjacent at nearly the same period in July. On the 31st of August, when the scourge had passed by, the board of health reported that out of the 209 cases, 104 had proved fatal.

The cholera appeared at almost the same date the next year, and was at its height about the first of September. The effects were even more serious than in the previous summer. Finally 300 deaths were reported.

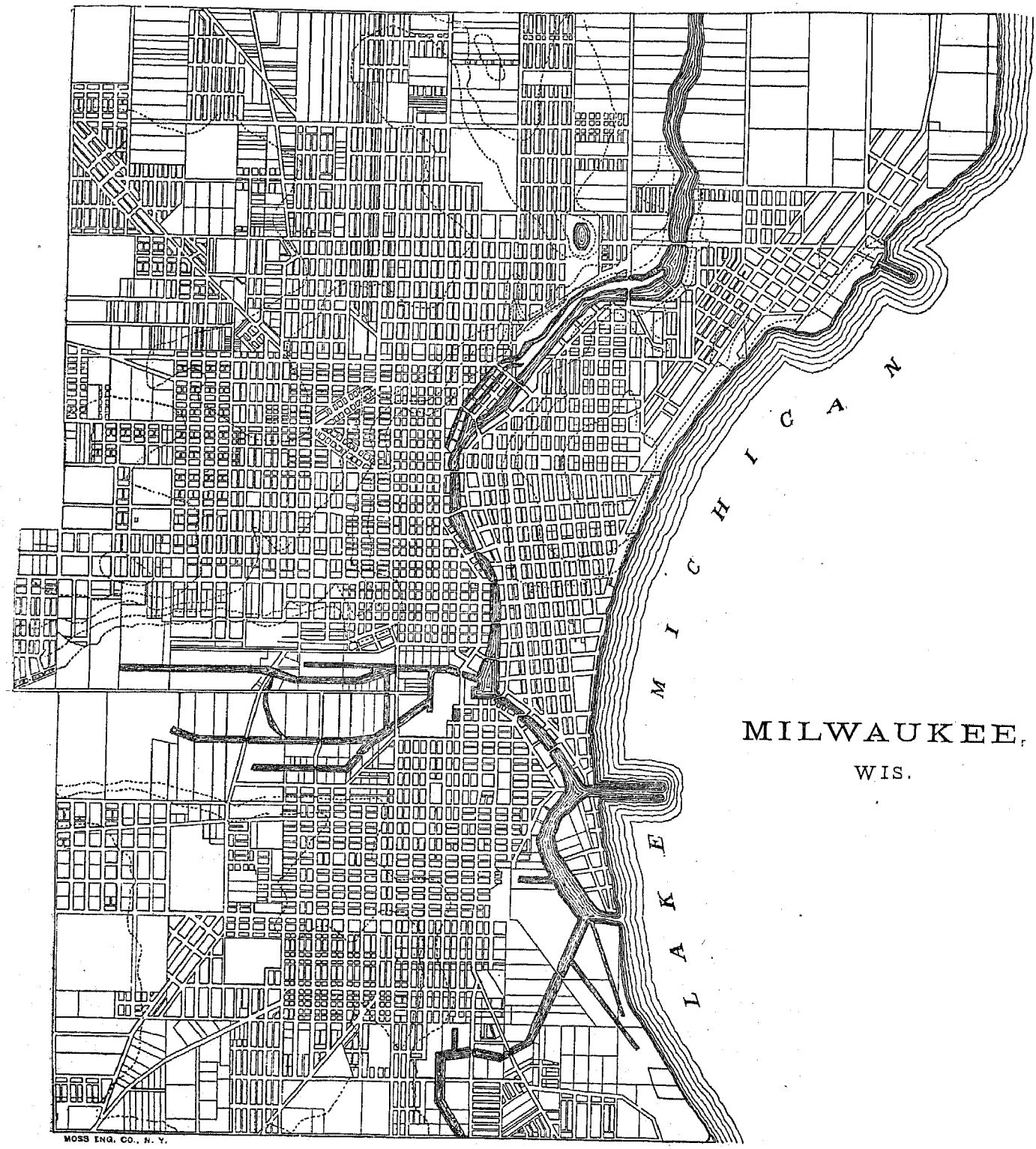
Milwaukee escaped the cholera in 1851, and had but few cases in the two following years. In 1854 the epidemic was severe, but not so fatal or so general as in 1849 or 1850.

The city was not again visited by any epidemic until 1868, when small-pox appeared. From December 1, 1868, to April 1, 1869, there were 500 cases of this disease reported to the health office, and this was not more than two-thirds of the whole number of cases in the city. From that time on it gradually decreased until October, in which month only one case was reported. In 1871, 774 cases of small-pox were reported, 263 of which proved fatal. In 1872 the number of cases was 616, of which 217 proved fatal. During the year 5,000 persons were vaccinated at the expense of the city. In 1873 there were 114 deaths from small-pox, since which time the city has been comparatively free from the ravages of this disease.

When Milwaukee became a city her population was 9,450; in 1847 it was 14,061; in 1848, 15,598. In the last-named year the division by nationality was: American, 6,969; German, 5,708; Irish, 2,487; and the proportion has not greatly changed since.

Gas was introduced into the city in 1852.

The first street pavements were laid in 1854, cobble-stones being the material used.


LAKE MICHIGAN
MILWAUKEE,
WIS.
MOSS ENG. CO., N. Y.

The only very disastrous fire that has ever visited the city broke out August 24, 1854. The total loss was $381,900, and insurance, $233,050.

The first steam fire-engine here was purchased in 1861. A paid fire department was substituted for the old volunteer department in 1866.

The panic of 1857 seriously affected Milwaukee. Its most serious cause of embarrassment was the delinquency of the railroads in meeting the interest due on their bonds. The floating debt of the city was in bad shape, and trouble followed; but by 1868 the city's finances were in much better condition.

The first street railway was opened to travel in May, 1860.

Saturday, September 8, 1860, will ever be recognized as the saddest day in the city's history. On the previous Thursday evening a band of 400 excursionists, comprising some of the most prominent Irish citizens and many members of the city military companies, left Milwaukee on a steamboat for Chicago. On the return trip on Saturday morning, when only 16 miles from Chicago and 4 or 5 miles from land, the boat ran into a schooner, and soon sank. A storm had just come up, and the scenes which followed were horrible. To make the sad story short, 225 lives were lost, all of persons who were either residents of Milwaukee or who had friends there.

On the 4th of April, 1866, the dam of the Rock River Canal Company gave way, carrying off two bridges and damaging others, flooding mills, and entailing a loss of $130,000.

The present water-works system was planned about ten years ago. Water was first pumped into the reservoir October 24, 1873, the length of pipe then laid being about 55 miles.

The most expensive improvement ever undertaken here was the work generally known as the Menomonee Improvements, which consisted in converting an extensive tract of morass, principally on the south side, to commercial use. It was begun in 1869. The cost was about $200,000, and 13,700 linear feet of dockage was by it rendered available for shippers.

The present court-house, the headquarters of the city and county governments, was begun in 1870 and finished in 1873.

The public library was established by legislative act, February 7, 1878.

MILWAUKEE IN 1880.

The following statistical accounts, nearly all of which were collected and forwarded by John Johnston, esq., of Milwaukee, indicate the present condition of the city:

LOCATION, ETC.

Milwaukee, the commercial metropolis of the state of Wisconsin, lies in latitude 43° 4′ north, longitude 88° west from Greenwich, on the west shore of lake Michigan, about 100 miles north of the southern end of the lake. The bluffs along the lake in the northeasterly part of the city rise to a height of 100 feet above the lake surface, while in the northwesterly part of the city the ground rises 175 feet above the lake. The lowest point, the beach on the lake shore, is 500 feet above sea-level.

The city lies on Milwaukee bay, a semicircular indentation of lake Michigan, which is 6 miles across and 3 miles deep, the north and south capes affording an excellent protection to shipping. No trade is handled now as formerly from piers run into the bay, but all commerce is carried on along the docks of the Milwaukee, Menomonee, and Keimickinnic rivers, whose united streams fall into the lake soon after their confluence. The channel of the united streams is 230 feet wide, with an average depth of 14 feet. The Milwaukee river, which is the main river, has the above depth and width for 2 miles, through the heart of the city. The Menomonee river was originally an extensive marsh, but is now being dredged into canals and slips, properly docked, and affording suitable sites for coal and lumber yards and all factories, having railroad as well as canal accommodations. The same is true of the Keimickinnic river. There are over 10 miles navigable within the city limits.

RAILROAD COMMUNICATIONS.

Milwaukee has the following railroad facilities:

The Chicago, Milwaukee, and Saint Paul railroad, to Chicago; to Running Water, on the Missouri river, opposite the mouth of the Nebraska, via Prairie du Chien, on the Mississippi, through Northern Iowa and Southern Dakota, with branches to Sioux Falls in Dakota, and Sioux City in Iowa; to Saint Paul and Minneapolis via La Croix, with branches to Ortonville, Mankato, and Flandreau, in Minnesota; to Oshkosh, Winneconne, and Berlin, Wisconsin; and Davenport and Fort Atkinson, Iowa, in Rock Island, Illinois—making a total of 3,009 miles.

The Chicago and Northwestern railroad, to Chicago, to Ishpeming, Michigan, via Menomonee branch, to Saint Paul, Minnesota; to Watertown, Dakota, etc.—making a total of 1,509 miles.

The Wisconsin Central railroad, to Green Bay, Ashland, and Eau Claire, Wisconsin—making a total of 444 miles.

The Milwaukee, Lake Shore, and Western railroad, to Wausau, Wisconsin, via Appleton, with branch to Oshkosh—making a total of 220 miles.

All the above roads, except the Chicago and Northwestern, have their headquarters here, and the total number of miles of railway centering in the city is 5,182.

TRIBUTARY COUNTRY.

The country immediately tributary to Milwaukee, and with which it has a local trade, is an agricultural one, studded with flourishing towns and villages. The crops raised are such as are common in the Northwest, and in some localities tobacco and hops are cultivated. The region is well watered, and the numerous water-powers on the several streams are utilized for grist and other mills. Though this is, strictly speaking, the country with which the city has a *local* trade, Milwaukee has intimate commercial relations with all that large expanse of territory touched by the several lines of railroads diverging from this point.

TOPOGRAPHY.

The city of Milwaukee is situated on three great promontories, separated by the valleys of the Milwaukee and Menomonee rivers, and the Keimickinnic creek, which join each other and lake Michigan in the south central part of the city. The suburb, Bay View, occupies a fourth prominence. In recent geological times the whole site of the city was a gently undulating plain, continuous with that which now slopes easily upward for many miles westward. Into this the Milwaukee river, flowing from the north, nearly parallel to the lake, the Menomonee from the west, and the Keimickinnic from the southwest, have cut their valleys to an average depth of about 100 feet, carving into relief the existing prominences.

The outline of the lake here curves deeply landward, forming a beautiful open bay. Except in the vicinity of the harbor proper, which lies within the mouths of the three streams, the lake frontage is formed of bold bluffs from 40 to 50 feet in height. From the nearly level crest of these bluffs the surface slopes by easy gradient westward to the Milwaukee river. On the opposite side, after passing a moderately level flood-plain, the surface rises to a plateau, almost 100 feet above the river, which stretches backward into the general plain of the surrounding country. On the south side, between the Menomonee and the Keimickinnic, is a similar river from flood-plain to plateau. The slopes, therefore, afford an efficient natural drainage, except near the mouths of the Menomonee and the Keimickinnic, where there is some low land, which is being filled artificially.

The subsoil is in the main a marly clay, freely pervious to water or gases. Beneath this in portions of the city there lie beds of sand and gravel, which in turn repose on strong clay. The rock is deeply concealed in general, but appears in the 4th ward, at the base of the bluffs facing the Menomonee, and at one point in the south suburb. Both outcrops are Niagara limestone. It is quite possible that the Hamilton cement rock may underlie the northern portion of the city, as a valuable quarry has been opened here, from which is taken a rock which makes a good hydraulic cement.

The country within a radius of 5 miles from the city is open, with probably 20 per cent. of timber on it, and there are no large ponds or marshes. The soil is diversified, but the greater part is a dark loam resting on clay subsoil, with occasional small areas of sand, and larger areas of brown sandy loam lying upon a gravelly subsoil. There are also occasional ridges of stiff clay that extend over limited areas. The elevations within this area are about the same as those of the city, though 20 miles back the land rises to a height of from 300 to 400 feet above the lake.

CLIMATE.

Highest recorded summer temperature, 98°; highest summer temperature in average year, 93°. Lowest recorded winter temperature, −25°; lowest winter temperature in average year, −20°. The average coldest mean temperature during 20 years is 22.76°, and the warmest, 70.21°—the average mean for the year being 46.18°.

The most important local climatic influence arises from lake Michigan, its waters very markedly subduing the severity of winter and the heat of summer. During the latter season lake breezes are prevalent, and they frequently reach back 20, 30, and occasionally 60 miles into the interior. The temporary influence of the lake is manifest in the native vegetation, and extends on the one hand and limits on the other the available cultivated varieties. The influence of the lake gives a frequency, if not predominance, to easterly winds, that are unusual in this general region of prevalent westerly winds.

Neither marshes nor elevated lands exert a sensible climatic influence. The former prevalence of forest added to the moisture derived from the lake, but this has been very essentially modified by clearing and cultivation.

STREETS.

The total length of streets in the city is 231.83 miles. There are 9 stationary bridges—4 of iron, 5 of wood; 17 swing bridges—9 of iron, 8 of wood; and 1 combination float bridge. Of the streets, one-quarter of a mile is paved

with broken stone, 25⅘ miles with wood, and 150 miles with gravel. The cost per square yard for each, as nearly as it can be estimated, is, for gravel, 35 cents; common wood pavement, 80 cents; wood blocks, Thilmany process, $1 30; and broken stone, $1 25. Of the wood streets, 1½ mile is paved with blocks of wood, prepared by the Thilmany process, and it is found that when this pavement is properly laid it will require but little repair during the first eight years. On ordinary wood pavement the average annual cost of repairs, after the first three years, is about 20 per cent. of the original cost.

The greater portion of the sidewalks are constructed of pine planks; a few walks are laid with flagstones, and in a few small sections cement is used. On all the graveled streets gutters are paved with cobble-stones, while on the other streets they are of the same material as the roadway.

Nearly all of the residence streets have rows of trees planted parallel to the curb. This work is done by the abutting property-owners at their own expense, and persons planting trees are required by ordinance to place the same in line two feet inside the curb. About 6 miles of streets have grass-plots on both sides.

The work of constructing streets is done by contract. Last year there were 13¼ miles of streets improved and paved at a total cost of $191,849 98. In the repair of streets most of the material needed is purchased by contract, and put into the work by laborers employed by the city. The work is under charge of the board of public works, and the annual cost of repairs is about $40,000. It is stated that formerly the street repairs were done under contract, but the present method seems to give the best results.

HORSE-RAILROADS, ETC.

There are 30 miles of horse-railroads in the city, using 101 cars and 541 horses, and giving employment to 174 men. Single fares are 5 cents each, but a package of 100 tickets is sold for $4. There were 4,014,765 passengers carried during the year.

There is 1 omnibus line, with 9 vehicles and 18 horses, and employing 15 men, that carries passengers at rates varying from 25 to 50 cents.

WATER-WORKS.

The water-works are owned by the city, and their total cost is $2,149,000. Water is taken from lake Michigan, through a conduit 200 feet long and 36 inches in diameter, and pumped into a distributing reservoir of 21,000,000 gallons capacity, about 150 feet above the lake level. The inlet and outlet to the reservoir are connected by mains in the bottom, so that direct pumping can be resorted to in case of necessity. In addition there is a stand-pipe for the high-service, 4 feet in diameter, 130 feet high, and inclosed in a stone tower. The average pressure in the mains varies from 36 to 60 pounds to the square inch.

The amount of water pumped per diem ranges from 10,000,000 to 14,000,000 gallons, the average being 12,269,000 per day. The average cost of raising 1,000,000 gallons one foot high is 20 cents.

The total expenditure during the year past was $83,768 39, of which $62,510 30 was for maintenance, and $21,258 09 for construction; and the total receipts were $161,993 54, the amount received from water-rates being $131,634 04. A few water-meters are used, but they have not been set long enough to show what effect they have on the consumption of water. There are nearly 91 miles of distribution mains, 7,524 taps, and 718 hydrants.

GAS.

The gas-works are owned by a private corporation. The daily average production is 275,000 cubic feet. The charge per 1,000 feet is, to small consumers, $2 25; to large consumers who pay promptly, $2; and to the city, $1 75. The city pays annually $35 ($31 for gas and $4 for rent of post) for each street-lamp, 1,368 in number.

PUBLIC BUILDINGS.

The city owns and occupies for municipal purposes, wholly or in part, the city hall, one-half of the county court-house, 24 school buildings, 3 police stations, and 8 fire-engine houses. The total cost of the municipal buildings (exclusive of the court-house) belonging to the city is $976,000. The old city hall cost $25,000. The court-house, owned by the city and county, is built of Lake Superior sandstone, and cost over $600,000. All the municipal offices are in this building.

Among the public buildings may be mentioned the United States custom-house, which contains the post-office, United States courts, etc. It is built of stone quarried at Athens, Illinois, and stands at the corner of Wisconsin and Milwaukee streets. The new county court-house, the Academy of Music, the Opera House, Mitchell's bank, etc., are all fine buildings and architectural ornaments to the city.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The municipality owns no public park of any size. Six of the wards in the city have small parks of 2 or 3 acres each, and the 7th ward has a beautiful slope of some 7 acres, on the shore of the lake. There are also several very handsome parks belonging to private persons on the shore of lake Michigan, and on the banks of the Milwaukee and Menomonee rivers, that are open to the public.

The grounds of the "Northwestern Branch, National Home for Disabled Volunteer Soldiers," are situated about a mile southwest of the city limits. They embrace some 400 acres, and are largely used by the people of Milwaukee as a place of recreation and pleasure. The women of Wisconsin had raised the sum of $100,000 for the establishment at Milwaukee of a home for all disabled Wisconsin volunteers; but when Congress, in 1865, established the National Asylum, with 3 branches, this sum was used for the purchase of land so as to insure the location of one of the branches here. With the exception of 250 acres that are reserved for farming purposes, the whole tract has been laid out as a park. The buildings and grounds are managed by a commandant appointed by the United States government, and all expenses, about $125,000 per annum, are provided for by congressional appropriation. No account is kept of the number of persons visiting the grounds, but it is estimated that about 100,000 of the citizens of Milwaukee visit the park during the year.

PLACES OF AMUSEMENT.

There are 3 theaters in the city, as follows: Academy of Music, with a seating capacity of 1,400; Opera House, seating 1,000; and the German theater, seating 600. The amount of the license for theatrical performances is left to the option of the mayor, and is usually nominal, being large only when some very objectionable performance calls for discouragement. The buildings or halls used for theatrical purposes pay no license as such.

Of concert-halls or lecture-rooms, not connected with churches, some of which are used at times for theatrical performances, there are: Second Ward Rink hall, seating 2,500; North Side Turner hall, seating 1,000; South and West Side Turner hall, seating 700; Turner hall, on the east side, seating 500; Bonaccord hall, seating 500; Progress hall, seating 800; Saint Andrew's hall, seating 400; Burman's hall, Liffe hall, and Concordia hall, of the same seating capacity (400); Semi hall, seating 500; and Dickinson's hall, seating 300.

Among the concert- and beer-gardens, Schlitz Brewing Company park is situated in the thickly settled part of the city, and has an area of 7 acres. It has a capacity for and can entertain 20,000 persons at one time. The concert-hall in the grounds has a capacity for 5,000 persons. The Milwaukee gardens, also in the thickly peopled part of the city, has an area of 2 acres, and a concert-hall, with a seating capacity of 400. In the suburbs there are Lueddemann's, on the lake, with an area of 20 acres, but no improvements; Mineral Spring park, area 33 acres, on the Milwaukee river; Miller's garden, area 6 acres; Greenfield's park, area 18 acres; and Ferny Brae, on the lake, area 6 acres. This last has a good house for entertainment. No record is kept of the patronage of any of these resorts.

DRAINAGE.

Milwaukee is now very largely sewered, in accordance with a systematic plan as shown by the accompanying map.

Before the adoption of this system the surface drainage of the city was effected with the aid of paved stone gutters from 5 to 6 feet wide, carrying the flow in some cases to natural water-courses or ravines, and in others to the river. The lower part of the city was drained through the alleys by means of wooden box-sewers, 4 feet across, save that brick sewers were laid in or across a few of the principal streets.

The present sewers are built very largely of vitrified earthenware or cement pipes, the choice between these materials being left to the contractor.

The sewers are ventilated only by means of perforated manhole covers and through ventilation pipes built in with the catch-basins, as shown in the accompanying illustration. It is difficult to see what better purpose is effected by this arrangement than would be received by carrying the 12-inch pipe directly into the catch basin at the water-line. The grade of the sewers at the outlets of the river is generally from 6 inches to 1 foot below low-water mark, so that they are sometimes submerged as much as 3 feet. All sewage flows directly or indirectly into one of the rivers intersecting the town. The need for removing deposits by hand is confined chiefly to the lower parts of the city, where the grade is slight, and to the catch-basins. This cleansing is ordinarily done once a year, in autumn or winter. In the upper parts of the city the sewers have sometimes to be cleansed by flushing.

The cost of minor sewers is assessed upon the abutting property to the amount of $1 60 or less per linear foot, one-half the actual cost being charged on each side of the street. Street and alley crossings are paid for out of the general sewer fund, as is the cost of main and other sewers in excess of $1 60 per foot, the cost of which is so assessed on the property. The contractor receives certificates of the board of public works, being a lien against such property, entered upon the tax-list and collected at the close of the year with the general city and other taxes.

Assessment is made on the basis of frontage, not of area or valuation.

The contract prices for sewers in 1880, including manholes, is as follows: Pipe sewers—12-inch, $1 14 per linear foot; 15-inch, $1 48 per linear foot; 18-inch, $1 66 per linear foot. Brick sewers—24-inch, $1 71; 30-inch, $2 68; 36-inch, $3 45; 42-inch, $3 56; 72-inch, $8 75. Catch-basins, $45 each.

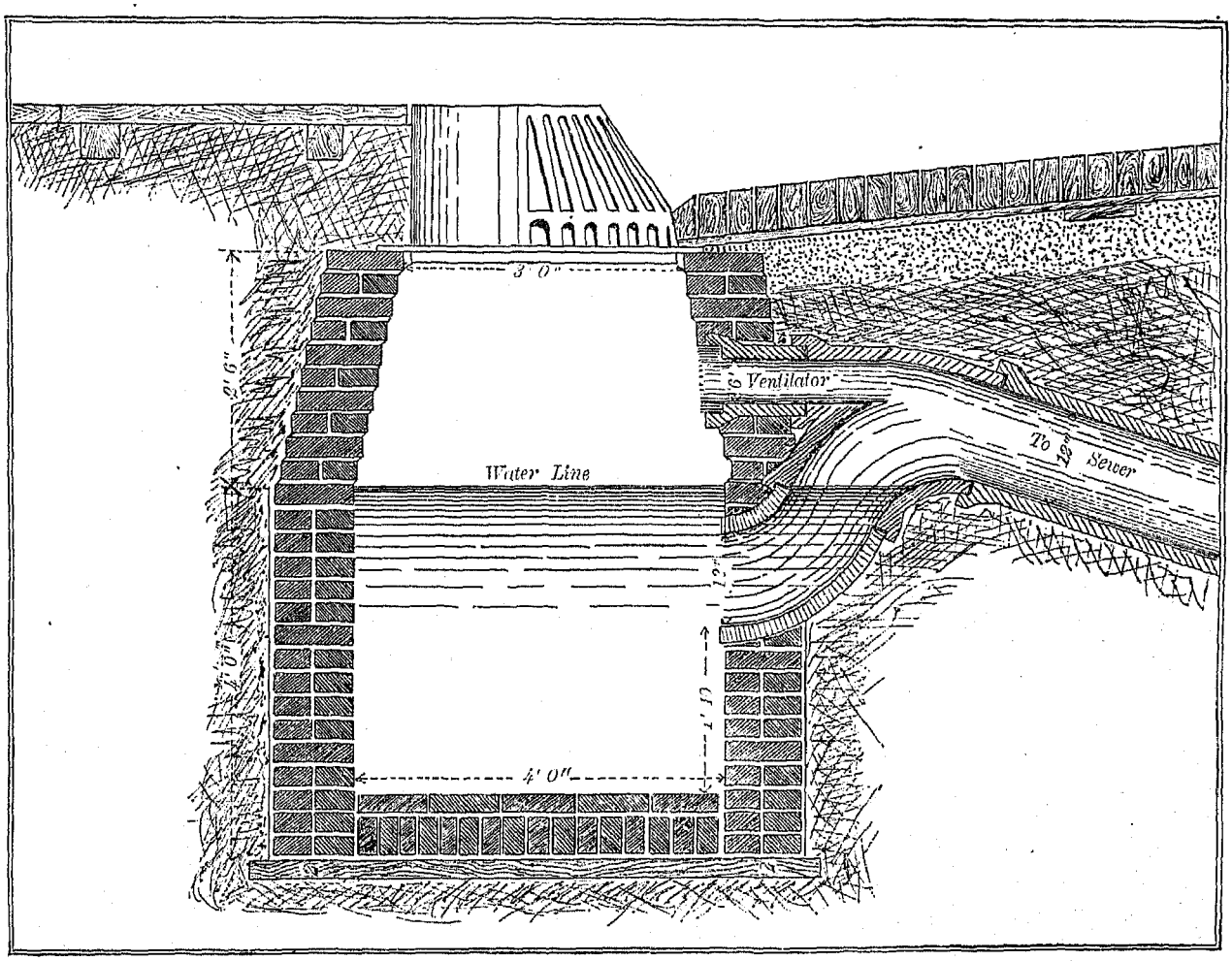
Based on specific authority contained in the city charter, the following ordinance, regulating the construction and use of public and private drains, was enacted by the council in October, 1874:

MILWAUKEE.

WIS.,

SEWERAGE MAP.

MOSS ENG. CO N. Y.


3' 0"
2' 6"
6" Ventilator
To 24" Sewer
Water Line
4' 0"

An ordinance to regulate the construction and use of public sewers and private drains.

The mayor and common council of the city of Milwaukee do ordain as follows:

SECTION 1. Any person who shall uncover or excavate under or around the brick or pipe sewers laid in this city for any purpose whatever, without the written consent of the board of public works, shall be subject to a fine of not more than five hundred dollars ($500); the person or persons by whom the work is done and their employers shall be deemed guilty of a violation of this section.

SEC. 2. Any person who shall make any connection with or opening into the brick or pipe sewers laid in this city, without having first obtained a written permit in each case from said board, shall be subject to a fine of not more than five hundred dollars for each offense, which fine shall be recoverable against the owners of the property in which such drain is made, or against the person or persons making it the same or causing it to be made, or their employers.

SEC. 3. The board of public works shall grant licenses to such persons as they may deem qualified to lay, alter, or repair any parts of house drain or drains, catch-basins, or strainer of said drain or drains, cesspool or water-closet connected with any brick or pipe sewer belonging to this city; and any person who shall do such work without being duly licensed to perform the same by said board, shall be subject to a fine not exceeding five hundred dollars for each offense.

SEC. 4. It shall be the duty of any person or persons using or constructing any private drain, sewer, cesspool, water-closet pipe, or any other pipe connecting with or emptying into any brick or pipe drain or sewer belonging to the city, to construct the same with proper traps when they enter houses, and otherwise construct and use the same strictly in conformity with the directions of the board of public works. Any person who shall use or construct any drain or sewer in a different manner from that directed by the board of public works or in violation of the order of said board, shall be subject to a fine of not more than five hundred dollars, which shall be recoverable against any person or persons constructing said sewers or their employers; and the owner of the lot or lots, or premises in which said work is constructed or used, shall be considered as authorizing such construction or use and liable to such penalty. The license of any person found constructing private sewers or drains in a manner different from the rules of said board shall be taken away from him.

SEC. 5. Any owner or occupant of premises who shall deposit or cause to be deposited any substance such as garbage, grease, rags, sand, earth, or such other substances as the said board may find it necessary to exclude from said sewers, pipes, house drains, or catch-basins connected with said sewers, or allow any substance to flow into the same in such a manner as to obstruct the same, shall be liable to a penalty of not more than five hundred dollars for each offense, and shall be liable for the cost of removing said obstructions.

SEC. 6. Said board and their authorized agents shall have free and unobstructed access to any part of the premises where house drains, cesspools, or water-closets connected with or draining into said sewers are laid, for the purpose of examining the construction, condition, and usage of the same, and making necessary alterations or repairs at any time of the day between the hours of 7 o'clock a. m. and 6 o'clock p. m., and any owner, occupant, or other person, on refusing to allow any officer or agent of said board access to any premises for such purposes, shall be liable to a fine of not more than five hundred dollars.

SEC. 7. Any person who shall willfully or maliciously injure or obstruct any sewers, house drain, cesspool, catch-basin, or any pipe laid or connected under the supervision or direction of said board, shall be liable to a penalty of not more than five hundred dollars, and to pay all expenses incurred on account of repairs and damages arising from the same.

Passed October 19, 1874.

In pursuance of the above ordinance the board of public works has issued specific rules for the laying of private drains, from which the following extracts are made:

APPLICATION FOR DRAINS.

* * * * * * * * *

No drain pipe can be extended from work previously done and accepted, or new connections of any kind be made with such work, unless previous notice of at least twenty-four hours is given to board of public works.

No work of laying drains can be commenced or continued without [*sic*] the permit is on the ground, in the hands of the drain-layer or one employed by him.

RULES FOR LAYING DRAINS.

* * * * * * * * *

No pipes or other materials for the drains can be used until they have been examined and approved by the city engineer, or by one of his assistants, or by a duly authorized inspector, and all pipes used from the connection with the sewer to the line of the lots to be of hydraulic cement or vitrified stone.

The least inclination that can be allowed for the water-closet, kitchen, or other drains of not over 6 inches in diameter, liable to receive solid substances, is one-half an inch in two feet, and for cellar and other drains to receive water only one-quarter of an inch in two feet. All drains to be laid at a grade of not over one-half an inch in two feet between the sewers and the sidewalks.

* * * * * * * * *

The inside of every drain after it is laid must be left perfectly clean and smooth through the entire length.

In case it shall be necessary to connect a drain pipe with a public sewer where no junction is left in the public sewer, the new connection with public sewer can only be made either by one of the employés of the board or when the officer of the board as named in regulation third is present to see the whole work done.

* * * * * * * * *

In case a water- or gas-pipe should come in the way of a drain, the question of passing over or under the water- or gas-pipe, or of raising or lowering it, must be determined by one of the officers named in regulation third. In no case can the pipe-layer be allowed to decide the question himself.

No exhaust from steam-engines can be connected with private or public drains, and no blow-off from steam-boilers can be connected without special permission from the board or its engineers.

* * * * * * * * *

Such information as the board has with regard to the position and junctions will be furnished to the drain-layer, but at their risk as to the accuracy of the same.

When any change of direction is made in the pipe, either in horizontal or vertical direction, curves must be used. No pipe can be clipped in any case.

Milwaukee has been confronted by a very serious problem in connection with the disposal of its sewage and of the foul waste of packing-houses and other establishments along the banks of the Menomonee river. The rivers

discharge together mainly through an artificial channel, and there is at times of low water little perceptible current in any of them. The Menomonee river, owing to the large amount of slaughtering, etc., carried on along its banks, is especially foul.

Some of its foulness is doubtless swept by the winds into Milwaukee river, and the sewage and surface wash of the city are an important element in the general contribution of filth.

Prior to 1880 various projects for the improvement of the rivers as well as of the general sanitary condition of the city were much discussed, and in November, 1879, a commission of engineers consisting of E. S. Chesbrough, Moses Lane, and G. E. Waring, jr., was employed to consider the whole subject and to recommend measures of relief.

The report of this commission was as follows:

CHICAGO, Illinois, *January* 12, 1880.

Messrs. HILBERT, BLODGETT, CASGRAIN, and ABERT, commissioners of public works, and Dr. O. W. WIGHT, commissioner of health, Milwaukee, Wisconsin.

GENTLEMEN: In your communication of December 2, 1879, you submit to us the following problems:

1. The best means of abating the river nuisance, the case being stated as follows: The best method of abating the so-called river nuisance of this city, and to report a definite plan on the same. It is expected of you to recommend through us to the legislative department of the municipal government the best means of abating the nuisance aforesaid. Any required changes in the sewer system of the city may be pointed out in a general and comprehensive way without entering into elaborate and detailed plans.

2. Possible needed alterations in the water-works, stated as follows: If the plan reported by you shall leave the water-supply of the city still liable to pollution from sewage or other deleterious matter, you will then be expected to recommend such changes in the water-works as necessity may require, designating the point where the water shall be taken.

3. The advisability of adopting the plan of your city engineer for a system of intercepting sewers.

After careful consideration of the whole subject we herewith submit the following report: The foulness of the rivers is due, of course, to the fact that they receive the outflow of all the sewers of the city, and the organic waste of the slaughter-houses and packing-houses in the Menomonee valley, while during the dry seasons their current is insufficient to carry these foul matters forward into the lake. There are no means by which these foreign substances can be purified and made inoffensive after being once delivered into the rivers. Their production is a necessary and constant accompaniment of the life and business of the city. The question is simply how to dispose of them otherwise and in such a manner as not to create a nuisance elsewhere. This question is here, as always, one of the gravest connected with municipal administration.

The tendency of the best practice of the world is more and more in the direction of the purification of sewage by application to the land—what is known as irrigation disposal. There are exceptional cases where these matters may, without injury, be delivered into water-courses or great bodies of water. These exceptions, however, are rare. The extent to which a delivery into lake Michigan would be safe with reference to the cleanliness of the shore and the purity of the water-supply can be determined only by actual experience.

In our judgment, while an outlet into the lake may answer a good temporary purpose, and while it may continue for a long time to be satisfactory during the winter and spring, it would not be safe to rely on this alone. The time must come, sooner or later, when at least during the summer and autumn such delivery would create a nuisance. We have, therefore, given much attention to the matter of irrigation disposal. This method is very extensively applied in Great Britain and on the continent of Europe. Its introduction has been greatly favored by the hope that it would result in a profitable return from the agricultural operations connected with it. This hope has in almost every instance been disappointed. Instances of profit have been very rare, and there is no sort of probability that the cost of construction and the considerable pumping charges necessary in the case of Milwaukee would meet with an adequate return from any agricultural result that could be obtained. It would nevertheless be reasonable to expect that the agricultural return would constitute a considerable relief in meeting these charges. This should not, however, be seriously taken into the account. The arguments in favor of irrigation disposal in your case are chiefly of a sanitary character, and they are sufficient. Such disposal would unquestionably secure under a proper adjustment of area of land to amount of sewage a well-purified effluent, so that the drainage from the irrigation farm would enter your streams as pure water. The certainty of this result and the uncertainty as to the permanent result of an outlet into the lake make it important that preliminary steps looking to ultimate irrigation disposal be taken at an early day.

Land well adapted for the purpose south of the Menomonee valley may be found in several quarters, and it can probably be purchased more cheaply now than later. The economical arrangement of the work would require considerable study, and probably the cost would be less and the efficiency greater if ample time were taken for such preliminary preparation. We therefore recommend, in view of the advisability of a resort to irrigation at no distant day, the purchase of about 500 acres of land if to be obtained at a fair price.

In the suggestions given below the work has all been regulated with reference to the addition to the general scheme of the irrigation feature with the least additional cost. So, too, the scheme suggested for immediate adoption is, so far as it goes, precisely what we should advise were irrigation to be undertaken immediately, for in any case it would be necessary to have an alternate arrangement for delivery into the lake during any necessary temporary stoppage of the irrigation works.

We recommend as being less costly, and as requiring less time in construction (but with the limitations indicated above), a temporary delivery of the whole dry-weather flow of the sewers, together with the necessary flushing water and the foul waste of all business establishments, into the lake at a point 1 mile south of the present harbor entrance, and 1,000 feet from the shore.

To select a point of outlet north of the present mouth of the river would increase the liability of offense to the city, and would very greatly increase the danger of contaminating the water-supply. Probably with an outlet at that point a new intake would be absolutely necessary. Sewage matter delivered at the point which we have indicated (1 mile south of the present harbor entrance) would reduce to a minimum the chance of nuisance, and as the lake water contaminated at that point would have the outflow of the river between it and the present crib, the probability is very strong that it would not, except under extraordinary circumstances, reach the water-supply, and even then so diluted as to be inappreciable by the senses.

The sewage of the city can be delivered into the lake only by the aid of pumping, and in order to secure a well-flushed condition of the intercepting sewers, pumping from a depth of 12 or 15 feet will be necessary.

We recommend that the pumping works be located in the Kinnickinnic valley, not farther north than the old harbor entrance, and that they be built to scale capable of discharging into the lake, at the point indicated above, the whole dry-weather outflow of the city, together with the necessary flushing water, allowance being made for probable increase of population. The intercepting sewers needed to carry the sewage to this point should, so far as practicable, be laid low enough to admit of their being flushed by the rivers. The

interception of the whole east side may be by means of a single sewer lying east of the Milwaukee river. In like manner the whole of the west side and of the south side may be intercepted at one level. The intercepting sewers should accommodate all sections of the city, and should be properly connected and carried across the rivers at suitable points, all delivering at the pumping station. The intercepting sewers should in all cases be connected with the present sewers at points higher than the highest high-water mark, so that during high stages of the lake the river water may not flow back into the intercepting sewers. This arrangement will require that portions of the city lying on low levels, and now connecting with the sewers at points below the high-water mark, should have new connections directly with the intercepting sewers, or with the present sewers at points above where their inverts are at high-water level.

It is our idea that during dry weather, when only foul sewage is flowing in the sewers, the whole of it should be conveyed to the pumping station and sent into the lake, but that during rains, when the flow would be too great for the capacity of the pumps, pumping should cease entirely, allowing the intercepting sewers to fill, and the whole outflow to pass out at the present mouths of the sewers into the rivers. The foul matter discharged at such times would be much diluted, and the rainfall would give a current to the rivers which would render such temporary delivery into them unimportant. After the storm-water has ceased running in the street gutters, pumping can be resumed.

It is proper here to refer to the well-studied plan of intercepting sewers prepared by your city engineer and submitted to our notice. We have deviated from his suggestions so far as to dispense with his middle and high level sewers, for the reason that for the dry-weather flow these would be unnecessary, and that the cost of pumping they would save would not equal the interest on their extra cost. As stated above, the foul ingredients of the whole storm-flow will be so much diluted that it will be safe to discharge it directly into the rivers at a time when their current is increased by rain.

The commissioner of health has submitted to us a suggestion that in addition to the present sewers a separate set of small pipe sewers be laid throughout the city to receive and carry to the pumping station all domestic and manufacturing waste, leaving the present sewers to serve only the purpose of discharging storm-water, street-wash, and subsoil drainage. While we fully appreciate the advantages of a separate set of sewers for house-drainage, we have considered it our duty to take the existing conditions of the city as we find them, and to turn its existing works to the best use in seeking the end desired. If the present sewers are not in good condition they can be made so for much less than the cost of a new system of sewers. Being in good order, it is only necessary to secure their proper flushing to enable them to work with full effect as an aid to the abatement of the river nuisance. We therefore recommend:

1. That all sewers in the city be thoroughly and minutely inspected, a record being made of every imperfection, and that systematic repair or reconstruction be undertaken at once.

2. That at the heads of the sewers there be constructed suitable self-acting flush-tanks to secure the through daily cleansing not only of the dead ends of the sewers where the discharge of the solid matters from house-drains is sometimes too great for the liquid discharge of the houses to carry forward, but also in connection with flushing apparatus advisable to other points, sufficient to remove any deposit of road detritus, etc., which, owing to the inclination, the form, or the roughness of the sewer, may be found to collect. To secure the full flushing effect of the discharge of the flush-tanks and apparatus, and of the natural flow, and to prevent contamination of the soil by sewage matters, the sewers should be made, if they are not so already, as nearly water-tight as possible, especially to the height of their usual flow-line.

3. The establishment of a system of frequent periodic inspection, to be continued until it shall have been demonstrated that the adjustment of the flushing arrangements is effective in every part of the sewers.

These recommendations being carried out, there will be secured the important condition suggested by the commissioner of health: that all foul matters be delivered at the outlet before decomposition has set in, such decomposition now taking place in the sewers, or in the rivers, being probably the most serious factor in the present foul condition of the latter. The evils to be apprehended from the delivery of sewage into the lake will be greatly less serious when the discharge of all organic matter in a fresh condition shall have been secured.

As we are in doubt as to what the future may develop in regard to the necessity for a new point of intake for the water-works, it seems unadvisable now to suggest further expenditure in that direction, which may not be required for a long time if the sewage is delivered in a fresh condition into the lake south of the river outlet, and which surely will not be required after the system of irrigation-disposal is adopted.

At the same time, as such a scheme has been considered, and as its execution may still become expedient, we recommend that the requisite preliminary details upon which to base future calculations as to such work be obtained.

We believe that the complete carrying out of the foregoing suggestions will result in a permanent abatement of what is known as the river nuisance.

Very respectfully,

E. S. CHESBROUGH.
MOSES LANE.
GEO. E. WARING, JR.

The following is taken from the report for 1880 of the board of public works:

The general influence of the report given above was to induce further investigation and strengthen the friends of interception, and the subject continued to command public attention until the legislature of 1880 took up the subject and passed the bill introduced by Senator Paul, entitled "An act to preserve and promote the public health of the city of Milwaukee," approved March 11, 1880, when public opinion soon concurred upon the execution of the works specified and required by that act as a substitute or a modification of all preceding plans for interception. The general features of this act are: (1) Prohibiting the deposit of any obnoxious or unhealthful matter from any slaughter-house or factory in any of the rivers of our city after July 1, 1880. (2) Making it the duty of the board of public works to provide for the disposal of all filth, refuse offal, obnoxious and unhealthful matters emanating from any such establishment, and to convey the same beyond the limits of the city by shortest and most practical route. (3) Giving authority to purchase property, pay for damage done in the performance of such duty, and necessary for such disposal, assessing the establishments named and benefited for a just part of the expense of construction, and specifying other powers for the construction and maintenance of the necessary improvements, with limitations upon municipal expenditures therefor. The tenor of this act and its provisions evidently coincides with the before-cited conclusion: That the slaughter-houses and manufacturing establishments in the Menomonee valley are the principal source of the pollution of that river, and that the other rivers were also seriously affected thereby, the act thus recognizing and including the discharge of all ordinary sewage into the river as a secondary evil to be relieved. The general plan adopted for the whole city under this act contemplates the interception and removal by gravitation, to one or more pumping stations, of all sewage and liquid refuse from an area of 8,700 acres, included within the limits of the city, together with one-fourth of an inch rainfall in twenty-four hours from the same area. The capacity of the works embraced in this plan is calculated for a prospective population of 280,000 inhabitants within the

present area of the city, 150 gallons of sewage daily for each inhabitant being safely regarded as a maximum estimate, or 42,000,000 gallons of sewage every twenty-four hours, and 59,000,000 gallons rainfall. In order to discharge this aggregate amount of 101,000,000 gallons daily, it is designed that the sewers shall flow only three-quarters full, and at the minimum velocity of 2¼ feet per second. The works in the Menomonee valley are designed to prevent the polution of the Menomonee river and its canals, thus affording the largest relief at the least expense, in the shortest time, by making an outlet to the lake for the liquid refuse of manufacturing establishments there located, and by intercepting sewage from the south sewage district as far as Mineral and Virginia streets and National avenue. The capacity of the proposed intercepting sewer is 25,000,000 gallons daily, but the amount of sewage tributary thereto at the present time does not exceed 4,000,000 gallons daily. This excess of capacity in the sewer may be employed in removing impure water from the west end of Burnham's canal and from the Menomonee, Muskego road, or from any other point adjacent to the line of the intercepting sewer that may be deemed advisable until other connections are made. The pumping-works are located south of the present harbor entrance, such central location being considered also practicable for delivering the sewage any distance out into the lake or wherever it will be most harmless; or by force-mains to any location where it may be wanted for irrigation in the future. The board of public works approved the plan, and in a communication to the common council, July 19, 1880, recommended the execution of it. A letter from the health commissioner was also sent to the council, which says: "In regard to your plan submitted to me several days ago for my opinion as to its sanitary value, and to be recommended by you to the common council, for the removal of all foul liquids from the city without allowing it to enter the rivers, I have carefully considered the plan, and give it my hearty indorsement." The common council in due time authorized the execution of the same as recommended.

CEMETERIES.

With the exception of one cemetery, area 7 acres, in which 24 bodies still remain, there are no cemeteries or burial grounds within the corporate limits of Milwaukee. The following burial places adjoining the city are used by the citizens for the burial of their dead:

Forest Home Cemetery, area 188 acres, is situated 4 miles from the post-office. Lots are sold for burial purposes only, and their improvement, etc., must be in accordance with the rules of the cemetery association. There has been a total of 6,459 interments made here since 1871, 748 having been made during the past year. Graves must be at least 6 feet deep and 12 inches within the line of the lot.

Greenwood Cemetery (Hebrew), area 10 acres, is situated 5 miles from the post-office and directly south of Forest Home cemetery. Lots are conveyed to purchasers in fee, subject to the rules of the cemetery. The restrictions are simply the use of the cemetery for Israelites and their families; the rules simply provide that there shall be no monuments, designs, or inscriptions of an improper kind, or contrary to the Jewish faith. The first interment made here was in 1872, and, up to the close of 1880, 154 burials have been made. Graves are dug 6 feet in depth.

Calvary Cemetery (Roman Catholic), area 70 acres, is situated 3½ miles from the post-office, at the corner of Spring avenue and Spring Hill road, in the town of Wauwatosa. Lots are sold at prices varying from $10 to $50, and the money received from this source is used for the improvement of the grounds. Up to November 1, 1880, there were 10,307 interments made in this cemetery, which was consecrated November 2, 1857, 709 of them being for the 10 months of 1880. The cemetery is governed in accordance with the rules of the Catholic church, and all graves must be from 3 to 6 feet in depth, according to the age or size of the deceased.

Union Cemetery, area 85 acres, is situated 4 miles from the post-office, and is used chiefly by the Lutheran church. The total number of interments is not stated, but during 1879 571 burials were made here.

Pilgrim's Rest Cemetery, area 20 acres, is situated 3½ miles from post-office, and is owned by the Saint Stephen Evangelical Lutheran church. The price of lots varies from 10 to 25 cents per square foot. The cemetery was opened the present year, the first interment having been made August 9, 1880. Graves must be dug at least 12 inches within the lot line, and at least 6 feet deep.

The location of Spring Hill and Trinity cemeteries was not stated.

In addition to the above there is a cemetery attached to the National home, in which are interred only the officials and inmates of the home, their wives and children, and soldiers dying in the vicinity of the home who have at times been inmates thereof. There is also a cemetery, with an area of 2 acres, attached to the county almshouse, situated 6 miles from the post-office. It is used for the deceased poor from the city and county, as well as for those dying either in the almshouse or in the county hospital. The limit of time after death for interment is from 24 to 48 hours, and the depth of graves is 4½ feet.

MARKETS.

There is no public or corporation market in the city. There is a joint-stock market of small dimensions, belonging to an association of gardeners.

SANITARY AUTHORITY—HEALTH COMMISSIONER.

The sole sanitary authority of Milwaukee is vested in an officer called the health commissioner, appointed by the mayor, subject to the confirmation of the common council, who holds office for the term of 2 years. The office was created by a state law, which vests in the health commissioner all power formerly belonging to the board of health. The city government has no control over the commissioner except power of removal. The duties of the health commissioner are to examine into and consider all measures necessary for the

preservation of the public health of the city, and to see that all regulations in relation thereto are enforced. He has authority, subject to the confirmation of the common council, to appoint such clerks, agents, assistants, laborers, etc., as he deems necessary for the proper discharge of his duties, and can call on the police force of the city for any assistance needed. He has authority to enter into and inspect any premises or buildings in the city; to order the removal or destruction of any articles deemed prejudicial to health; to regulate or remove any manufactory that creates a nuisance or carries on a business that is considered detrimental to the public health; and in fact to do all things necessary for the sanitary care of the city. During epidemics the commissioner has authority to take possession of and occupy as temporary hospitals any building in the city, the common council being required to pay a just compensation for the use of the same, and to do all things needful to check and control the spread of the disease. His salary is $2,500 per annum.

The annual expenses of the commissioner are from $6,000 to $8,000, being for salaries, printing, and incidental expenses. The removal of garbage is paid out of the general city fund, the removal of night-soil by the persons owning the vaults, and the abating of nuisances by the parties responsible. During epidemics the commissioner has power to increase expenses, limited only by its reasonable exercise.

ASSISTANTS.

At present the commissioner has 7 assistants, as follows: 2 physicians, 1 secretary, 1 meat inspector, 2 general inspectors, and 1 disinfector; none of these have police power, but, as has been stated, the commissioner has power to make requisition on the police force, even to call out a *posse comitatus*, and all his orders are served by policemen.

NUISANCES.

Inspections are made regularly in all parts of the city, and also as nuisances are reported. When a nuisance of any kind is proved to exist, an order is at once issued to abate or remove the same within a given time, and if this is not done the party responsible is liable to arrest and summary trial for the offense. If the commissioner deems it necessary to have any nuisance removed at once, or if the nuisance exists on property the owner of which is not known, he can have the nuisance abated at the expense of the city, and the sum expended for the work becomes a lien on the property in the same manner as any tax upon real estate.

Defective house-drainage, privy-vaults, cesspools, and sources of drinking-water are inspected, and, if found to exist, orders are issued by the commissioner to attend to house-drainage, to clean vaults or cesspools, and to fill up all polluted wells. In the case of defective sewerage, street-cleaning, etc., an order for correction of the same is sent by the commissioner either to the board of public works or to the ward foreman.

GARBAGE.

The health commissioner makes the contract for the removal of garbage, subject to the confirmation of the common council, and also makes rules and regulations, which he can enforce, for the conservation of the garbage and the proper manner of removal. The removal of excrement is controlled by the commissioner. The pollution of streams and harbor is now the dominant sanitary question of the city.

BURIAL OF THE DEAD.

All interments are made outside the city limits, but before a burial is allowed the death must be reported to the health commissioner, and a permit for interment obtained from the secretary. The undertaker must take this permit to the cemetery.

INFECTIOUS DISEASES.

Small-pox patients are either quarantined at home (all communication with the house, except by physician or nurse, being stopped) or sent to the public pest-house, situated in the southwestern suburbs of the city, 60 rods from any habitation. Scarlet-fever patients are quarantined at home, and a notice is placed on the house. Schools, both public or private, are notified of all cases of contagious diseases, and are required to reject children from infected houses. When a disease of a contagious nature appears in a boarding-school the house is placarded, which practically closes the school.

Vaccination is not compulsory, but it is frequently done at the public expense. All diseases of a contagious or infectious nature must be reported within 24 hours to the health commissioner either by the attending physician or by persons having cognizance of the same, and a penalty is imposed for non-compliance.

REGISTRATION AND REPORTS.

All deaths, with the diseases causing the same, are recorded by the health commissioner. The record of births is kept by the register of deeds. The health commissioner reports monthly and annually to the common council, and his reports are published. This annual report covers all the work done by his department during the year, together with such recommendations for future action as he deems advisable.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets of Milwaukee are cleaned at the expense of the city and with its regular force. The work is done wholly by hand. The paved streets are cleaned about once a week, and the other streets about once a month, or as often as is deemed necessary. The work is under the direction of the board of public works, and is only tolerably well done. The annual cost of the service is between $53,000 and $54,000. The sweepings are used for filling low lots. The service has no particular merit, and is more costly than it should be. The principal defect is the manner of disposing of the sweepings, the practice of using them as filling being objectionable. The health commissioner in his annual report for 1879 says:

> One thing is certain, the sweepings of streets should not be used for filling low places and vacant lots. Such places usually contain an abundance of moisture, and an accumulation of wet street-sweepings is but little, if any, better than a rotting manure-heap. Houses built upon such made ground are especially unhealthy. The ground air comes up freighted with poisonous gases from the decaying organic matter below, filling the habitations of unsuspecting people, intensifying, if not producing, many diseases that flourish in the midst of filth.

Removal of garbage and ashes.—All garbage is removed under contract at the expense of the city, the matter being under the direct supervision of the health commissioner. While awaiting removal the garbage must be kept in tight-covered wooden vessels, not exceeding one bushel each in capacity, unmixed with ashes, and must be placed at a point on the premises most accessible for the collector. From April 20 to October 20 the garbage is removed daily, and during the remainder of the year twice a week. The garbage-collectors are required to drive through alleys in preference to streets, where alleys exist and are passable. The garbage is taken outside the city limits. Ashes are collected by the board of public works, and are generally used for filling. The annual cost to the city for the collection and removal of garbage is $10,000. It is reported that nuisances and probable injury to health sometimes result from the improper keeping of garbage on premises, from infrequent removal, from improper handling, and from improper final disposal.

Dead animals.—The removal of the carcasses of all animals dying within the limits of the city is included in the contract for removing garbage. The contractor makes his rounds and collects the carcasses in the same manner as he collects garbage. All dead animals are taken outside the city and disposed of to glue factories, etc. During the past year 850 dead animals were removed. It is said that the system works well, and that the carcasses, being of more or less value, are promptly removed.

Liquid household wastes.—In those portions of the city where the public sewers extend, the liquid wastes from houses are run into them, and where there are no sewers the wastes are thrown into cesspools or privy-vaults. Here and there cases occur where the house wastes are run or thrown into the street-gutters, but, as the commissioner of health is making a vigorous war on the practice, it is being discontinued. From 5 to 10 per cent. of the premises in the city are provided with cesspools or dry wells. These are usually porous, a few overflow into the sewers, in some places they receive the waste from water-closets, and when they receive excreta they are treated in the same manner as privy-vaults in regard to cleansing. The street-gutters are not flushed. Touching the contamination of drinking-water by the overflowing or the underground escape of the contents of cesspools and privy-vaults, the health commissioner in his annual report of 1879 says:

> The waters of *shallow wells*, or of wells in the drift formation, are regarded as the most dangerous of all. * * * In our city the shallow wells are very diverse. The waters of some are exceedingly bad, of others fairly good. The geological structure of the drift and topographical features determine their character. If we penetrate the earth as in sinking a well, we first find soil and loose dirt of varying thickness, then we strike the "upper red clay" in most places. After passing through this we enter a beach deposit of sand and gravel. Going down we next find the "lower red clay". Beneath this is another beach deposit of sand and gravel. Under that lies a sheet of "blue bowlder clay". There are six layers—three of clay and three of looser, more porous, material. The three sheets of clay intercept the water which percolates freely through the earth, sand, and gravel beds that lie upon them at different levels. Some of our shallow wells only reach down to the upper red clay. The waters of these are very bad. Other wells penetrate deeper, to the lower red clay. The waters of these are not good, but by no means so bad as the first. Many wells go down fifty feet or more, to the blue bowlder clay. The waters of these are very good where surface drainage does not run into them from the top of the ground. The first class of shallow wells, or those which only reach to the uppermost layer of clay, are little better than cesspools. They receive the surface water which is impregnated with slops, offal, stable manure, and the contents of privies. The second class, or those which descend to the gravel bed between the upper and lower sheets of red clay, are very much better. They receive water that has been partially filtered, yet in most cases the surface water drips down into them, poisoning them more or less, according to the conditions of the locality in which they are found. The third class, or those that descend to the sand and gravel beds between the lower red clay and the blue bowlder clay, reach water that has been more thoroughly filtered, and may be regarded as fair in quality; but they are liable to contamination in the same way as the second class. The number of these shallow wells, somewhat technically so called, runs into the thousands. Many of our people are still dependent upon them for water. All of them are dangerous, some of them extremely so. * * * In the low lands, along the rivers, where the process of denudation has gone on cutting through the regular formation of the drift, some shallow wells have been sunk in the alluvial deposit, which are little more than receptacles of surface-water in which every description of filth has been steeped.

Human excreta.—It is estimated that less than 4,000 of the 18,748 dwellings in the city are provided with water-closets, the remainder depending on privy-vaults. The majority of the water-closets deliver into the sewer, very few delivering into cesspools. There are no ordinances regulating the construction of privy-vaults. They are cleansed by regular licensed scavengers, who must use air-tight carts for this purpose, and the work must be

performed between the hours of 11 p. m. and 4 a. m. The night-soil is taken outside the city limits and used for manure, and though it is used on land within the gathering-ground of the public water-supply, it has no appreciable effect on the water, as lake Michigan is a large reservoir.

Manufacturing wastes.—Liquid manufacturing wastes are, as a rule, run into the river, while the solids are hauled outside the city limits. In some cases the latter have been thrown into privy-vaults, but this practice is not allowed.

POLICE.

The chief of police is appointed by the mayor, subject to confirmation of the city council; and the members of the force are appointed by the chief, subject to the approval of the mayor. The chief of police, salary $3,000 per annum, has direct command of the force, and is held responsible for its efficiency, general good conduct, etc. It is his duty to see that the public peace is preserved, and that all the laws and ordinances are enforced. The remainder of the force in the several grades and the annual salaries are as follows: One first lieutenant at $1,500; 1 second lieutenant at $1,200; 4 detectives at $1,000 each; 2 sergeants at $900 each; 3 roundsmen at $850 each; 6 station-keepers at $800 each; and 69 patrolmen at $800 each. The uniform consists of dark-blue suit, with brass buttons, and a cap, hats being worn part of the year. The men furnish their own uniforms, the average cost being for each suit $30, for each overcoat $25, and for head-gear $2 75 per man. The patrolmen are equipped with pistols and clubs, which are carried concealed. The hours of duty are for day men from 7 a. m. to 8 p. m., and the night men from 8 p. m. to 5 a. m., and the streets in the city are patrolled by policemen.

During the past year (1880) there were 2,564 arrests made by the police, the principal causes for which were: drunk and disorderly 668, drunk 557, disorderly 566, assault and battery 101, and larceny 160. In the majority of the cases disposed of the prisoners were either fined or sent to the house of correction. During the year property to the value of $23,928 97 was reported to the police as lost or stolen, and of this, $14,480 50 was recovered and returned to the owners.

There were 3,167 station-house lodgers during 1880, as against 3,445 in 1879.

The force is required to co-operate with the fire department by rendering all the assistance it can, and with the health department and board of public works by serving notices and executing orders. Special policemen are appointed by the chief and approved by the mayor. They are hired by private persons to protect property, and though appointed as policemen, so as to give them a legal status, they receive no pay from the city.

The annual cost of the police force is about $76,000.

FIRE DEPARTMENT.

The following is taken from the annual report of the chief engineer for the year ending December 31, 1880:

The manual force of the department consists of 1 chief engineer, who is also superintendent of the fire-alarm telegraph, 1 assistant chief engineer, 1 assistant superintendent of fire-alarm telegraph, 1 veterinary surgeon, and 95 officers and men, divided into 13 companies. The apparatus consists of 7 steam fire-engines in service and one old one in reserve; 1 chemical engine, 6 two-wheel hose-carts, 3 four-wheel hose-carriages, 3 hook-and-ladder trucks, and 1 fire-escape. There are 14,050 feet of hose and 43 horses in use.

The department responded to 257 alarms during the year. There were 167 fires, by which property to the amount of $95,284 was destroyed, the total amount of insurance involved being $1,036,050.

The total expenses of the department for the year were $104,267 11.

COMMERCE AND NAVIGATION.

[From the reports of the Bureau of Statistics for the fiscal years ending June 30.]

Customs district of Milwaukee, Wisconsin.	1879.	1880.
Total value of imports	$75,220	$102,151
Total value of exports:		
Domestic	$1,346,852	$1,395,806
Foreign		
Total number of immigrants		27

Customs district of Milwaukee, Wisconsin.	1879.		1880.	
	Number.	Tons.	Number.	Tons.
Vessels in foreign trade:				
Entered	65	24,808	127	54,032
Cleared	55	19,079	59	22,011
Vessels in lake trade and fisheries:				
Entered	8,458	3,749,092	9,338	3,911,878
Cleared	8,606	3,755,541	9,484	4,016,670
Vessels registered, enrolled, and licensed in district.	361	73,380	348	67,855
Vessels built during the year	5	231	16	2,627

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Milwaukee for 1880, being taken from tables prepared for the Tenth Census by A. A. Loper, chief special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	Average number of hands employed.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries	844	$18,766,914	16,015	3,022	949	$6,946,105	$28,975,872	$43,473,812
Baskets, rattan and willow ware	4	90,000	108	15	101	46,660	88,825	114,300
Blacksmithing (see also Wheelwrighting)	34	54,850	103	.....	.....	52,204	31,410	122,540
Bookbinding and blank-book making	7	21,700	56	47	18	31,505	26,081	78,718
Boots and shoes, including custom work and repairing	59	296,275	462	55	9	162,263	380,074	605,183
Brass castings	6	108,300	140	2	2	51,112	76,436	107,114
Bread and other bakery products	36	61,350	102	16	29	37,254	255,449	358,806
Brick and tile	5	328,500	346	.....	43	89,720	77,276	225,808
Brooms and brushes	4	13,000	50	5	.....	15,240	16,720	47,620
Carpentering	47	149,780	745	.....	.....	311,581	543,315	980,035
Carpets, rag	5	5,100	19	25	.....	4,000	12,550	22,350
Carriages and wagons (see also Wheelwrighting)	11	97,000	148	.....	2	62,265	76,500	184,000
Clothing, men's	52	1,895,128	1,902	2,350	50	912,657	2,243,365	3,703,987
Clothing, women's	4	64,000	34	163	.....	29,000	109,000	147,160
Coffee and spices, roasted and ground	9	257,621	125	19	15	89,550	693,042	931,640
Confectionery	4	144,054	110	80	20	43,542	378,370	474,922
Cooperage	39	142,250	526	.....	35	234,115	337,880	680,445
Coppersmithing (see also Tinware, copperware, and sheet-iron ware)	3	41,500	20	.....	.....	10,692	22,870	44,392
Cordage and twine	3	5,000	9	.....	.....	3,200	10,000	16,600
Dentistry, mechanical	5	8,000	10	1	2	4,500	10,500	30,000
Drugs and chemicals	6	40,872	15	12	.....	9,386	55,179	85,393
Flouring- and grist-mill products	11	1,066,000	265	.....	.....	136,266	3,795,289	4,294,708
Foundery and machine-shop products	30	1,286,445	1,437	.....	30	673,302	1,173,907	2,252,784
Furnishing goods, men's	3	7,000	7	9	1	1,890	17,000	28,850
Furniture (see also Mattresses and spring beds; Upholstering)	16	329,800	497	14	15	212,501	223,301	568,268
Furs, dressed	3	61,000	14	38	5	25,000	89,500	136,000
Hairwork	3	8,500	.....	11	.....	2,800	6,050	13,200
Hand-knit goods	5	26,000	2	538	52	14,500	45,500	93,000
Hardware	5	11,700	10	.....	10	8,600	14,000	32,160
Hats and caps, not including wool hats	3	26,000	8	14	.....	7,500	17,928	34,000
Jewelry	4	15,000	18	.....	.....	8,316	31,000	47,000
Leather, curried	17	800,425	375	.....	.....	160,441	1,874,595	2,210,078
Leather, dressed skins	5	71,500	46	.....	.....	20,000	67,925	104,581
Leather, tanned	17	1,008,525	407	.....	.....	173,861	1,612,400	2,101,195
Lithographing (see also Printing and publishing)	4	69,125	116	2	13	57,751	79,640	166,800
Liquors, distilled	2	142,000	20	.....	.....	9,180	95,427	145,650
Liquors, malt	13	4,732,900	1,040	.....	.....	525,573	2,259,345	4,034,310
Looking-glass and picture frames	4	12,975	10	.....	.....	7,222	19,900	35,470
Lumber, planed (see also Sash, doors, and blinds)	3	70,000	115	4	11	35,000	50,000	117,000
Marble and stone work	11	95,000	107	.....	2	73,256	106,450	220,396
Masonry, brick and stone	4	8,500	27	.....	2	12,000	14,000	34,750
Mattresses and spring beds (see also Furniture)	4	3,800	8	5	2	2,550	12,000	17,500
Mineral and soda waters	6	34,200	44	5	5	14,208	31,450	62,050
Painting and paperhanging	31	53,950	204	.....	2	68,105	95,607	200,540
Plumbing and gasfitting	8	47,000	95	.....	1	43,000	71,700	138,400
Printing and publishing (see also Lithographing)	24	434,700	518	43	48	268,270	200,486	675,087
Pumps, not including steam pumps	4	4,075	9	.....	.....	3,150	4,622	11,508
Saddlery and harness	20	73,300	107	.....	38	44,451	112,620	199,525
Sash, doors, and blinds (see also Lumber, planed)	7	261,000	512	.....	18	139,100	303,000	557,000
Shipbuilding	8	136,500	227	.....	.....	110,413	138,963	301,705
Shirts	3	2,100	4	17	.....	4,990	5,790	17,050

Mechanical and manufacturing industries.	No. of establishments.	Capital.	Average number of hands employed.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Slaughtering and meat-packing, not including retail butchering	7	$789,000	928	.....	25	$187,596	$5,529,618	$6,099,486
Soap and candles	5	120,000	50	4	11	24,620	204,100	280,090
Stone- and earthen-ware	8	69,700	67	.....	.....	17,511	21,755	66,600
Tinware, copperware, and sheet-iron ware (see also Coppersmithing)	20	95,950	150	.....	4	56,087	106,994	215,544
Tobacco, chewing, smoking, and snuff (see also Tobacco, cigars and cigarettes)	3	331,000	200	6	20	78,500	786,645	978,281
Tobacco, cigars and cigarettes (see also Tobacco, chewing, smoking, and snuff)	56	238,375	733	4	77	301,934	344,939	835,506
Trunks and valises	4	183,000	218	.....	45	76,720	115,800	244,600
Upholstering (see also Furniture)	6	11,000	46	.....	.....	22,800	97,500	146,500
Vinegar	5	62,000	32	.....	.....	18,415	42,000	149,000
Watch and clock repairing	4	4,100	8	.....	1	3,780	4,800	12,675
Wheelwrighting (see also Blacksmithing; Carriages and wagons)	13	47,500	67	.....	.....	27,870	29,800	80,950
Wirework	5	4,750	8	.....	.....	3,140	3,185	10,885
All other industries (*a*)	69	2,084,830	2,160	468	125	1,059,440	3,728,001	6,437,945

a Embracing agricultural implements; artificial feathers and flowers; artificial limbs; bags, paper; baking and yeast powders; boot and shoe uppers; boxes, cigar; boxes, fancy and paper; boxes, wooden packing; bridges; carriages and sleds, children's; carriage and wagon materials; drain and sewer pipe; dyeing and cleaning; electroplating; engraving and die-sinking; engraving, wood; fertilizers; files; food preparations; furniture, chairs; galvanizing; gloves and mittens; ink; iron and steel; lightning rods; lumber, sawed; mixed textiles; models and patterns; musical instruments, organs and materials; musical instruments, pianos and materials; oil, linseed; paints; patent medicines and compounds; pickles, preserves, and sauces; refrigerators; roofing and roofing materials; safes, doors, and vaults, fire-proof; scales and balances; show-cases; starch; steam fittings and heating apparatus; stencils and brands; stereotyping and electrotyping; straw goods; tools; toys and games; type founding; wood preserving; wood, turned and carved; and woolen goods.

From the foregoing table it appears that the average capital of all establishments is $22,235 68; that the average wages of all hands employed is $332 57 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is $43,895 72.

OSHKOSH,

WINNEBAGO COUNTY, WISCONSIN.

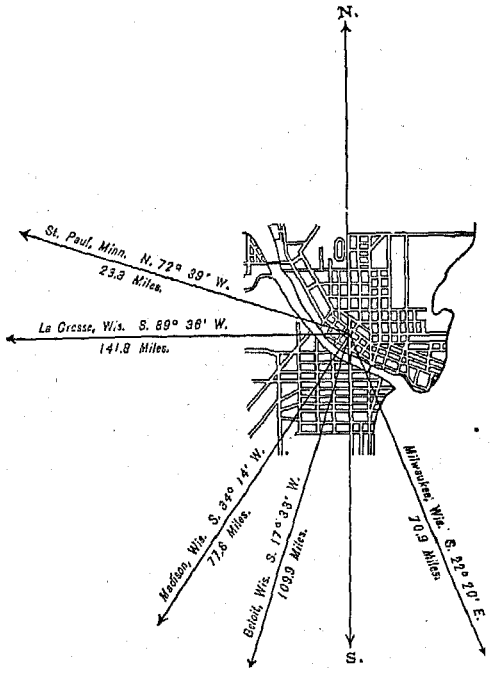
POPULATION

IN THE

AGGREGATE

1860-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	.....
1860	6,086
1870	12,663
1880	15,748



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	7,733
Female	8,015
Native	11,094
Foreign-born	4,654
White	15,661
Colored	*87

*Including 2 Chinese and 8 Indians.

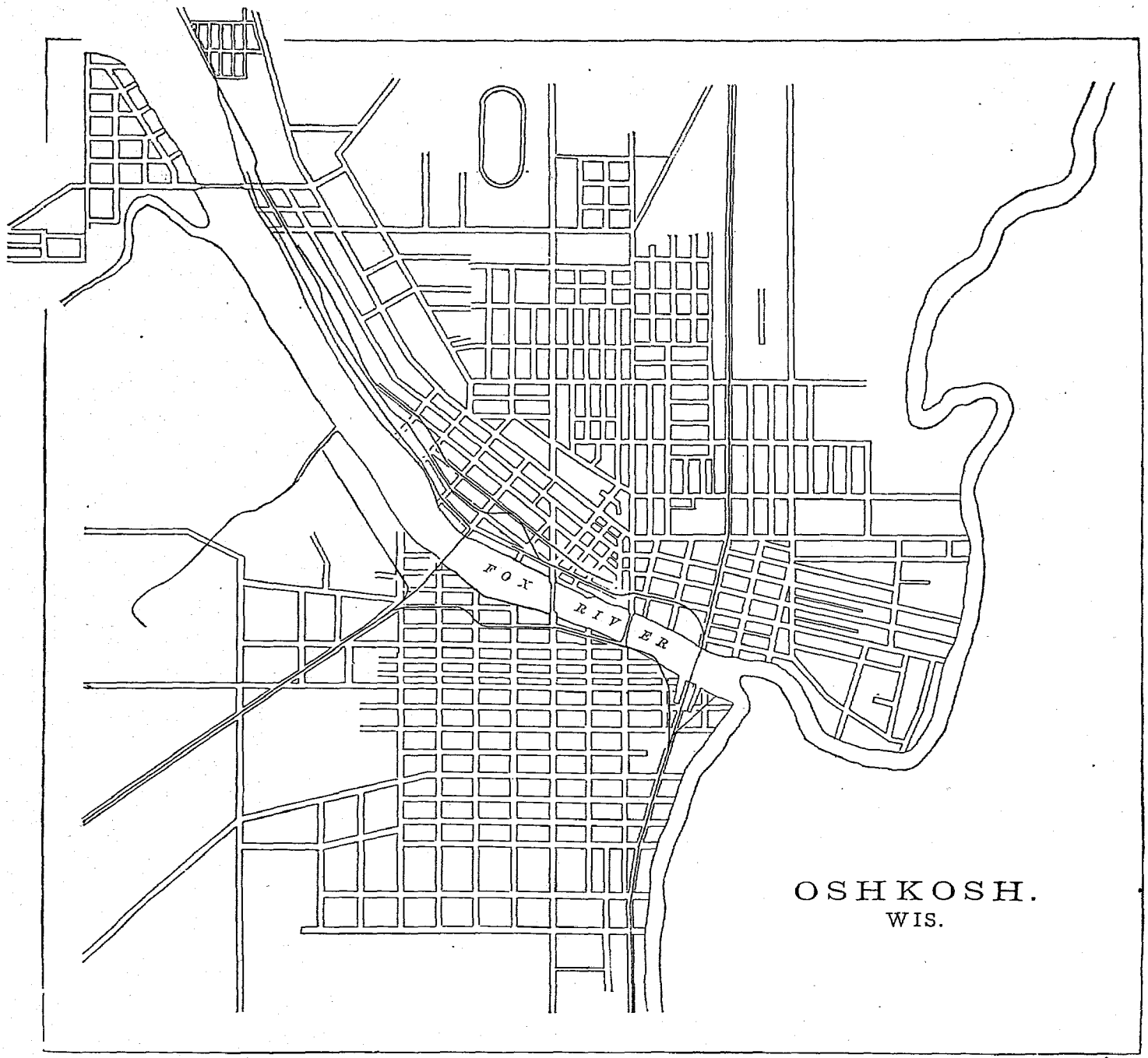
Latitude: 44° 1′ North; Longitude: 88° 32′ (west from Greenwich); **Altitude: 758 feet.**

FINANCIAL CONDITION?

Total Valuation: $4,444,000; per capita: $282 00. Net Indebtedness: $148,500; per capita: $9 43. Tax per $100: $2 26.

HISTORICAL SKETCH.

A so-called French trading-post was established on the upper Fox river, 10 miles above the present site of Oshkosh, in the year 1818, but no Americans settled in the vicinity until more than fifteen years later, when a few adventurous pioneers came into the wilderness around lake Winnebago and began to build huts and saw-mills and to make farms. In 1836 one of these hardy adventurers removed from the village of Neenah, where he had been at work on the mill, to the south side of Fox river, at what is now known as Algoma, and bought out a ferry, a poor affair, which he began to run. At that time the land south of the river was owned by the government, and that mouth of the river where Oshkosh now stands was still held by the Indian tribe, the Menominees. In August, 1836, Governor Dodge effected a treaty at Grand rapids for the purchase of the land north of the river. Learning of this, Stanley and one Chester Gallup moved across the river, took up land, and built houses. Other people came, and a settlement gradually sprang up to which they gave the somewhat inappropriate name of Athens. In the spring of



OSHKOSH.
WIS.

1840 the English, French, and Halfbreeds, or Canadians, in the vicinity, met and voted that this should be changed to the less euphonious but more suggestive name of Os-kosh, the name of the chief of the Menominees. In some inexplicable way an "h" has been added, making it Oshkosh. In 1846 the first village plot was made, the settlement having gained considerable size meanwhile. In 1858 it was organized as a city. Oshkosh has been peculiarly unfortunate in having had no less than six extensive conflagrations, besides a number of smaller ones, within the last twenty-one years. On May 9, 1859, the entire business portion of the city was destroyed, 170 buildings being burnt; on May 24, 1861, the whole side of a street on the south side of the river was destroyed, including many stores and 2 hotels; on May 1, 1866, half the business portion of the city was burnt; on May 9, 1874, 28 residences, 6 barns, and much lumber were destroyed; on July 14, 1875, 600 dwellings were destroyed, the loss being estimated at from $600,000 to $800,000; on April 28, 1875, 500 residences, 69 stores, and numerous public buildings, manufactories, etc., were destroyed, with a total loss estimated at from $2,500,000 to $3,000,000. After every fire better buildings were erected than those burnt.

Oshkosh is in the remarkable diagonal valley occupied by Green bay and the Fox and Wisconsin rivers, which traverses the state obliquely like a great groove, and cuts down the central elevation half its height. A line passing across the surface from lake Michigan to the Mississippi at any other point would arch upward from above 400 to 1,000 feet, according to location, while along the trough of this valley it would reach an elevation barely exceeding 200 feet. This elevation is reached near Portage, at a point where the Fox and Wisconsin rivers are separated only by a flat, sandy plain, which during high water the Wisconsin overflows. A canal 12,400 feet in length has been dug across here, and the United States government has from time to time expended much money in improving the courses of the Wisconsin and Upper Fox and Lower Fox rivers, with a view to establishing communication for boats of large size between the Mississippi and lake Michigan. Small boats have often passed through, and boats and barges for the Mississippi have been built at Oshkosh. When the government improvements are finally completed, Oshkosh will be greatly benefited by the traffic which will follow. The distance from Oshkosh to the Mississippi by this route is very nearly 225 miles.

About one-third of the population of Oshkosh is of German origin; the majority of the rest is of American origin.

OSHKOSH IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Oshkosh:

LOCATION.

Oshkosh, the capital of Winnebago county, is situated on both sides of the Fox river, at its entrance into lake Winnebago, at an average altitude of 758 feet above the surface of the sea; the altitude of lake Winnebago is 751 feet above sea-level. The Fox river is 500 feet wide at Oshkosh, and its mouth is very deep; the channel has upward of 20 feet of water, which continues along the whole river front of the city, thence to lake Butte des Morts, just above the city, and through that lake there is a depth of over 12 feet of water; the river is broad and deep, with no perceptible current. Over the 15.5 miles of lake navigation between the Upper and Lower Fox rivers, there is a depth of over 20 feet. The level of the lake does not reach more than 3.5 feet above the ordinary level maintained by the dams at the outlets, but it is occasionally drawn by the water-power mills nearly 2.5 feet below this level. About 10 miles above Oshkosh the Fox river is joined by the Wolf river, a stream of nearly its own size. This river is navigable for small boats for 50 miles.

RAILROAD COMMUNICATIONS.

Oshkosh communicates with the world by means of 3 railroads:

The Milwaukee, Green Bay, and Marquette line of the Chicago and Northwestern railroad, which connects the places named.

The northern division of the Chicago, Milwaukee, and Saint Paul railroad, the branch of which terminating at Oshkosh connects with the main line at Horicon Junction, and so with Chicago and the Northwest.

The Milwaukee, Lake Shore, and Western railroad, whose terminals are Wausau and Milwaukee, Oshkosh being on a branch that joins the main line at Hortonville Junction.

TRIBUTARY COUNTRY.

Oshkosh is situated near the somewhat uncertain line dividing the timber-lands on the north from the prairies on the south. The country around the city is mostly prairie land, the soil being a rich loam. The Wolf river, which has been mentioned as emptying into the Fox above Oshkosh, penetrates the lumber regions in the northern part of the state, and a great quantity of logs and sawed lumber is floated down the river to Oshkosh, which naturally becomes the entrépot of the whole valley.

TOPOGRAPHY.

The site of Oshkosh is nearly level. The soil is calcareous and very fertile, with a substratum of limestone. There is good natural drainage, the surface being sufficiently undulatory. Numerous gravel-beds are found in the county, furnishing material for road-making. These have been largely utilized, and excellent roads prevail. Good drinking-water is abundant, flowing wells being common. On the south side of the river, between the settled district and Algoma, a large portion of the territory is low and marshy, with water setting back into the land at certain seasons, but being removed from the business and residence portions of the city it is of little consequence. What other bays and marshy spots there were along the river have been gradually filled up. There are 3 carriage bridges and 2 railroad bridges across the river. The total area of the city is about 8 square miles.

CLIMATE.

Highest recorded summer temperature, in 1879, 97°; lowest recorded winter temperature, in 1879, —26°. The temperature charts published by the Smithsonian Institution show that the mean summer temperature is 68°, mean winter temperature 21°. Owing to the proximity of so much water, the heats of summer are tempered, the nights being particularly cool and pleasant.

STREETS.

Total length of streets 45 miles, of which 0.75 mile is paved with the Nicholson wooden pavement, and 25 miles are well graveled. The latter are cheaply constructed and easily kept in good repair. Sidewalks are for the most part made of 2-inch pine plank. A large number of trees have been transplanted and set out along the streets, the varieties most common being hard and silver-leaf maple and poplar, with some linden and elm.

WATER-WORKS.

There are no water-works.

GAS.

The gas-works are not owned by the city. The amount paid by the city for each street-lamp is $25.

PUBLIC BUILDINGS.

The city owns 3 fire-engine houses, 5 brick school buildings, and 2 wooden buildings, of which the total cost was about $90,000. There is no city hall.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are no public parks and pleasure-grounds.

PLACES OF AMUSEMENT.

The city contains 2 halls used for theatrical purposes, seating, respectively, 700 and 600, and 6 smaller halls used for concerts, dances, etc., with seating capacities varying from 300 to 500. There are no concert- or beer-gardens. Theater companies pay a license of $5 per night.

DRAINAGE.

The city has no system of sewerage.

CEMETERIES.

There are 2 cemeteries connected with the city—one managed by the city authorities, located within the city limits on the north bank of the river, at the mouth of lake Butte des Morts, just opposite Algoma; and the other controlled by the Roman Catholics, location not given. The former contains about 20 acres, and the latter 5 acres. There being no records kept of interments, and no regulations concerning them, no information on these heads can be given.

MARKETS.

The reports state that there are "no public markets except one for hay and one for wood, and no market buildings".

SANITARY AUTHORITY.

The chief health organization of Oshkosh is the board of health, an independent board, with 5 members, 3 of whom are physicians. Its expenses are generally very light, since the members receive no pay, and the only expenditures are for printing and police duty. During an epidemic its expenses might be increased to an unlimited extent. It may cause nuisances to be abated, issue burial permits, and perform all the usual duties of such a board. The president of the board has general superintendence of the sanitary condition of the city. There are no assistant

health officers or inspectors employed. The board is appointed by the common council, and meets once a month, or oftener if called together. As to the conservation and removal of garbage the board is reported to exercise absolute control. Small-pox patients are isolated in a pest-house, but scarlet-fever patients are not isolated. Attendance at school is forbidden to children from any house where contagious diseases exist. There is no public pest-house. Vaccination is not compulsory. Births, diseases, and deaths are registered under the state law. The board reports every year to the common council, and no separate report is published.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned both by the city and by private abutters, the city's work being done by the city's own force by hand. Main street is cleaned every week, and the others when necessary. The work is said to be well done, the annual cost being $150. The sweepings are deposited in the marsh.

Removal of garbage and ashes.—Garbage is removed by housholders, being finally buried or burned. Wood ashes are used in making soap.

Dead animals.—Dead animals are buried, the annual cost being very slight.

Liquid household wastes.—Chamber slops, laundry waste, and kitchen slops are all disposed of in the same way, but in what way is not reported, except that none of it goes into sewers, because there are none. The overflow from cesspools and privy-vaults is thought to contaminate water more or less.

Human excreta.—The dry-earth sytem is very little used. Night-soil is buried.

POLICE.

The police force is appointed by the common council and governed by the mayor. The chief of police has a salary of $750 per year, and the 8 patrolmen, $450 each per year. They wear blue uniforms, which they provide themselves. The patrolmen serve 10 hours per day each, and patrol 4 miles of streets. There were 640 arrests last year, the principal causes being drunkenness and disorder, burglary, and assault and battery. There were 14 station-house lodgers in 1880, against 24 in 1879; 28 free meals were furnished at a cost of 25 cents per meal. Special policemen are appointed by the mayor and common council. The yearly cost of the police force (1880) is $5,070.

PUBLIC SCHOOLS.

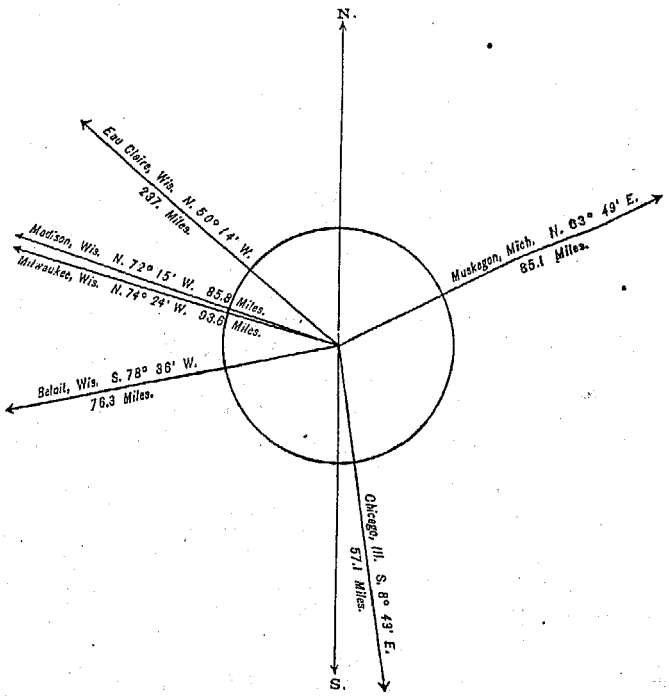
The school government of the city is provided for by a board of education consisting of a superintendent appointed by the city council, and six commissioners, one from each ward, elected biennially by the people. There are 7 school buildings, one for the high school and each of the 6 ward schools. At present 51 teachers are employed, 7 males and 44 females, with a salary list of $20,800 per year. The expenditure for all school purposes from April 1, 1880, to April 1, 1881, was $31,623 40. In September, 1880, there were 5,874 children of school age in the city; of these, 988 were in attendance at private and denominational schools in the city, and about 125 at a state normal school located here.

RACINE,

RACINE COUNTY, WISCONSIN.

POPULATION IN THE AGGREGATE, 1850-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	5,107
1860	7,822
1870	9,880
1880	16,031



POPULATION BY SEX, NATIVITY, AND RACE, AT CENSUS OF 1880.

Male	8,082
Female	7,949
Native	10,327
Foreign-born	5,704
White	15,887
Colored	*144

* Including 2 Chinese.

Latitude: 42° 43′ North; Longitude: 87° 47′ (west from Greenwich); **Altitude: 589 to 639 feet.**

FINANCIAL CONDITION.

Total Valuation: $7,692,669; per capita: $480 00. Net Indebtedness: $218,512; per capita: $13 63. Tax per $100: $1 32.

HISTORICAL SKETCH.(a)

The first settlement made on the present site of Racine was in 1834, Captain Gilbert Knapp, of the United States Navy, making a claim on all the land now covered by the principal part of the city. Early in 1835 a large immigration set in. The first store, the first hotel, and the first school were opened in 1836. The first election of county officers was held in 1837. The first newspaper (Racine *Argus*) was issued February 14, 1838. The village was chartered in 1841; the harbor was completed so as to admit the first steamboat in 1844; and the city was incorporated in 1848.

A fire occurred January 14, 1861, in which valuable records were lost by the burning of the probate judge's office. January 14, 1866, there was a very large fire, destroying real and personal property to the value of $200,000,

a The following sketch, as well as a good deal of the statistical information under the head of "Racine in 1880", was prepared and forwarded by a committee appointed by the city authorities for this purpose.

including the first business block in the city, one hotel, one church, and several valuable buildings. There have been but three churches burnt, and these were speedily replaced by better buildings. In two instances only have fires occurred in manufacturing establishments. The city has not been exempt from the depressions in value incident to the general financial crises of the country; but, with the exception of these temporary set-backs, there has been a gradual, steady, and solid improvement; and since the adjustment of its bonded indebtedness and the beginning of its manufacturing industries, the growth of the city in population and the increase in the value of its real estate have been constant.

The country adjacent to the present city of Racine being farming land, and the harbor of Racine being one of the best on the lake, forming a convenient shipping point, this vicinity was early settled by emigrants from the farming communities of the eastern states. The direct and comparatively quick communication by water with the state of New York had a great deal to do in forming the character of the early settlements, as by far the larger number of settlers came from that state. These farmers required supplies, and we find in the earlier history of the city that the only occupations of the residents were store-keeping and the avocations incident to the moving, handling, and selling of goods. There were two mills on the river to grind the home grists of the farmers. Soon, however, more grain was raised than could be consumed at home, and more warehouses and docks were built along the natural harbor afforded by the river. Thus began a shipping interest which in time assumed no small dimensions, and finally a line of steamers, owned in the city, was exclusively engaged in carrying away grain and bringing merchandise. Plank roads were built, reaching into the country 60 miles, and the streets were filled with wagons, bringing grain to the warehouses for shipment and taking goods back into the interior. The residents of the early city were Americans; the foreign element was small, comprising one or two Jewish merchants and quite a colony of Irish, the latter engaged in the labor of loading and unloading vessels. Their homes were naturally in sight of the river, and there they have remained. The natural advantages of the city as a shipping point were increased by the building of a railroad running west to the Mississippi, and the ready access to the timber of northern Wisconsin and Michigan led one and another to begin the making of some tool or implement.

The proximity to Milwaukee and Chicago, with their large stocks of goods and greater capital, offering better advantages to the farmer, soon led him to take his grain to those markets where he could obtain more for his money, and as the trade of those cities increased, the farming and grain trade was diverted from Racine, the warehouses and elevators became useless and were torn down, until there was left only one elevator, solely used to store grain when those in Milwaukee were full; the wheat vessels were exchanged for smaller craft suitable to the local trade, and the line of steamers owned here were either sold, or, when wrecked, the loss was not replaced. Racine ceased to be a trading-point, but the natural advantages for manufacturing remained and were improved upon, one shop succeeding another, while the number of stores increases only as there are more workmen to supply. Americans who at first worked in the small shops of Racine left to start shops of their own, or in search of farms over which they might have exclusive control, and their places were soon filled with the patient, steady-going, skilled workmen from the manufactories of Europe. English and Scotch machinists and wood-workers soon became predominant, and when the small wagon and thrashing-machine shops grew to larger dimensions they were filled with mechanics, nine-tenths of whom are found to be of foreign birth, quietly working year after year with no ambition to take the place of the American foreman.

RACINE IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Racine:

LOCATION.

Racine lies in latitude 42° 43′ north, longitude 87° 47′ west from Greenwich, at the mouth of Root river, on the west shore of Lake Michigan, 62 miles north of Chicago and 23 miles south of Milwaukee by rail. The city is situated on a promontory extending into the lake, the principal portion being on a plateau 50 feet above the water of the lake. The altitudes above sea-level vary from 589 feet, surface of lake Michigan, to 639 feet. The river on which the city lies affords a good harbor, admitting vessels drawing 14 feet of water, and allowing wharfage room for 100 vessels at a time. The channel is here 200 feet wide and the current is very slight.

RAILROAD COMMUNICATIONS.

The city is touched by the following trunk lines:

The Milwaukee division of the Chicago and Northwestern railroad, from Chicago to Milwaukee.

The Racine and Southwestern division of the Chicago, Milwaukee, and Saint Paul railroad, from Racine to Cedar Rapids, Iowa.

TRIBUTARY COUNTRY.

The country immediately tributary to Racine is purely agricultural, much attention being given to stock-raising. Aside from the manufacturing interests the city can not be said to have much trade with the surrounding country.

TOPOGRAPHY, ETC.

The site of the city is a level plateau, about 50 feet above the level of the lake, with Root river flowing through it. The soil at the surface is a sandy loam for the east half of the city and clay on the west, with a thick stratum of clay about 10 feet below the surface and limestone underlying this. There is a gentle inclination toward the river, thus affording good natural drainage. The country back lies in swells or ridges running north and south. The top of the first one, 3 miles west of the city, is 150 feet above lake Michigan. Directly north and south of the city the soil is sandy, with patches of sand underlaid with gravel, while to the west the "prairie" soil prevails, underlaid with clay. There are no marshes, ponds, or small lakes in the vicinity. Within a radius of 5 miles there was formerly considerable timber, but it is now nearly all removed.

CLIMATE.

Highest recorded summer temperature, 104°; highest summer temperature in average years, 95°. Lowest recorded winter temperature, —25°; lowest winter temperature in average years, —15°. The proximity of the lake tends to moderate the extremes of temperature, while the northeast winds make the summer very pleasant.

STREETS.

There are 43 miles of streets in the city, and, with the exception of about three-quarters of a mile of broken stone laid on one street, none of them are paved. From the manner and time in which the work was done it is not possible to make any estimate on the cost of the broken stone. It is stated that "the nature of the soil does not render paving imperative". Sidewalks are made of 2-inch plank, and a legal sidewalk is 6 feet wide. In the principal streets the gutters are of plank. In all the residence parts of the city trees are planted along the sides of the streets at the outer edge of the sidewalks. Each ward raises a fund by taxation for street repairs, etc., and the same is expended under the supervision of the alderman from the ward. From $5,000 to $8,000 is used each year, mostly in filling in broken stone and gravel into the lowest parts of the streets. Contract work is preferred when practicable. There are no horse railroads in the city. An omnibus line with 3 vehicles and 6 horses, and employing 6 men, carries passengers at the uniform rate of fare of 5 cents.

WATER-WORKS.

There are no water-works, but an artesian well, owned and managed by a private corporation, supplies about one-quarter of the territory of the city with water sufficient for drinking and sprinkling purposes only. Two other artesian wells were sunk by private parties, and so far used by themselves only, the water from which is excellent, being suitable for all purposes.

GAS.

The gas-works are not owned by the city. The daily average production is 50,000 cubic feet. The charge per 1,000 feet is $2 50 net. The city pays $24 per annum for each street-lamp, 54 in number.

PUBLIC BUILDINGS.

The only buildings owned by the city are 8 school buildings and 3 engine-houses. They are built of cream-colored brick made in the vicinity, and their total cost was $60,000. The city owns no city hall and uses no part of the county buildings, which latter are owned and occupied wholly by the county. A large room, containing the council chamber and offices of city clerk and treasurer, is rented by the city for municipal purposes.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are no pleasure-grounds, strictly speaking, in the city. There are 3 public parks and 1 square, two being 240 by 280 feet, one 230 by 285, and one 160 by 100. They are simply vacant squares planted with trees, except one, which has been improved with a fountain, seats, etc., erected and maintained by private enterprise. The land included in these parks was deeded to the city by the original owner, and their annual cost for maintenance is merely nominal. They are controlled by the city council in the same manner as the streets.

PLACES OF AMUSEMENT.

The Opera House, seating capacity 600, and 3 halls, with a seating capacity of 400 each, are used for theatrical purposes, etc. There is one lecture hall used for concerts, with a seating capacity of 300. All traveling companies

pay a license to the city of $3 for the first exhibition, and $1 50 for each succeeding night. There are "no regularly organized concert- and beer-gardens, as such institutions are ordinarily managed. There are 3 beer-halls in or near the city, at which dances are occasionally held during the summer, and beer sold, and which have beer-gardens for dancing attached".

DRAINAGE.

Racine has no system of sewerage, and, with the exception of a few private drains, there are no sewers.

CEMETERIES.

There are 3 cemeteries connected with Racine, as follows: *Mound Cemetery*, area 120 acres, and *Roman Catholic Cemetery*, area 10 acres, are situated 2 miles west of the city, and *Evergreen Cemetery*, area 10 acres, is situated 2 miles south of the city. Burials in this latter cemetery are no longer permitted. The total number of interments in all the cemeteries is reported as 4,125, and it said that about 400 people die annually. Graves for adults are required to be 6 feet deep, and for children under 10 years of age 4½ feet deep. Mound cemetery is owned and controlled by the city. Lots are sold by the common council, and a portion of the cemetery is set apart for the use of non-residents.

MARKETS.

The city has no public market-houses, all meat, vegetables, etc., being sold by private parties at their places of business.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary organization of Racine is the board of health, an independent body composed of 3 members, 2 of whom are physicians, appointed annually by the mayor. Including the small salary paid to the health officer, the annual expenses of the board, in absence of any declared epidemic, are $150, and this sum can be increased only by appropriations from the city council. There is no fund set apart for the use of the board, so that unless there is a special necessity its work is limited and somewhat superficial. Its authority extends to a general cleaning of the city, with sufficient power during epidemics to meet all emergencies, "but it needs money to carry them out." The health officer, salary $100 per annum, makes inspections, etc. He has sufficient powers to arrest for non-compliance with health orders. The members of the board receive no pay, and the president (or chairman) does most of the work. The board meets about once a month and reports all necessary work done and the sanitary improvements needed to the city council for final action or appropriations of money. Regular inspections are not made. When nuisances are reported the localities are visited by the health officer; if it is a doubtful case the board inspects, and its decision is final. So far the work of the board has not been extended to the inspection and correction of defective house-drainage, sources of drinking-water, etc. The board does not appear to exercise any control over the conservation and removal of garbage, nor has it published any regulations concerning the pollution of streams. Burial permits are issued by the board on certificates of the attending physicians.

INFECTIOUS DISEASES.

There have not been 6 cases of small-pox in the city during the past fifteen years. Scarlet-fever patients are quarantined at home, so far as it can be done. If diseases of a contagious nature should break out, either in public or private schools, the board would take cognizance of the fact. "Whooping-cough and measles are not noted particularly, as in fact the result with these diseases is not worth the expense and inconvenience. Keeping children from school when the diseases are in the family does not prevent the spread of them." There is no pest-house. Vaccination is not compulsory, and is not done at the public expense.

REPORTS.

The record of all births and deaths is kept by the board, the former being reported within 30 days, and the latter within 24 hours, while the registration is governed somewhat by a state law. The board reports annually to the mayor and council, and the reports are published with the proceedings of the council.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city, with its own force, and wholly by hand. The cleaning is done about twice a year, and is reported as being done efficiently. The annual cost of the service is not much, as it is done mostly by tramps, and the sweepings are taken out of the city. The defect of the system is said to be that the streets are not cleaned often enough.

Removal of garbage and ashes.—The garbage is removed both by the city and by householders. A few persons have it removed daily, or every other day; "but too often it is thrown out upon the ground, scattered about, removed only as it is raked together in heaps and carted off." Garbage is taken anywhere it can be disposed of, while ashes are deposited on the streets. It is reported that nuisances and probable injury to health occur from keeping garbage on the ground on premises, and that the system has all the defects that belong to "no system".

Dead animals.—The carcasses of all animals dying within the city are at once removed, and either buried or turned over to a soap factory. The annual cost of the service is from $30 to $40, and from 25 to 30 dead animals are removed annually.

Liquid household wastes.—The larger portion of the liquid wastes from the houses in the city are thrown out on the ground about the yards, one-fourth of this entering the gutters, and of the remainder, not over 25 per cent., goes into cesspools. The cesspools are porous, are not provided with overflows, in some instances receive the wastes from water-closets, and are not governed by any regulations as to construction or cleansing. The entire system is "wholly defective". Dr. J. G. Meacham, jr., chairman of the board of health, analyzed the waters from 144 wells used for drinking purposes in the 1st ward of the city, and reported only 47 good at time of examination; "all others contaminated by a soil saturated with filth-matters, sewage, etc." This examination was conducted in but one ward, and regarding other parts of the city Dr. Mecham says: "Incidentally with this investigation several specimens of water from other wards have been sent me, and from their condition I am aware that in some parts of the 2d and 3d wards the water is at present unwholesome. The supply is from the same source (wells) as in the 3d ward, and as the soil becomes more and more impure the unwholesomeness of the water will increase."

Human excreta.—Nearly all the houses in the city depend on privy-vaults. There are perhaps about 40 water-closets all told, and these deliver into cesspools. Very few of the privy-vaults are water tight, and there are no regulations as to their construction or cleansing. They are occasionally cleaned, but "generally covered over and filled with earth and a new vault made". In not over half-a-dozen cases is the dry-earth system used.

Manufacturing wastes, both liquid and solid, flow into the river and thence into lake Michigan.

POLICE.

The chief of police is appointed annually by the mayor, subject to confirmation by the city council, while the other members of the force are appointed by and may be removed by the mayor. The chief of police, salary $600 per annum, is the executive officer, and has general supervision over the force, which consists of 6 patrolmen at $600 a year each. The uniform is blue, with brass buttons, and the men provide their own at a cost of $35 per suit. The patrolmen are equipped with clubs and revolvers; they are on duty from 7 p. m. to 5 a. m., and patrol 6 miles of streets. During the past year 275 arrests were made, the principal causes being for drunkenness, disorderly conduct, vagrancy, and violating city ordinances. Their final disposition was either by fines or imprisonment. During 1880 property to the value of $3,000 was reported to the police as either lost or stolen, and of this $1,200 was recovered and returned to the owners. The county jail being used by the city for a lockup, there are no station-house lodgers. The force is required to co-operate with the fire department by protecting property at fires, with the health department by using all measures to prevent the spread of contagious diseases, and with the building department by seeing that all houses are erected in accordance with the city ordinances. Special policemen are appointed by the mayor to preserve order on special occasions. The yearly cost of the police force (1880) is $4,200.

FIRE DEPARTMENT.

The following regarding the fire department of Racine is all that was mentioned on the subject in the report on the city, made by the special committee. "The fire department consists of 2 steamers, 1 chemical engine, and a hook-and-ladder apparatus, operated by paid men, and doing good and effective service."

SCHOOLS.

The public schools consist of the high school and the grammar and primary department, using 8 buildings, costing $57,000, and employing 44 teachers. The public schools are under the immediate supervision of a city superintendent, acting under and by authority of a board of commissioners, who are appointed by the mayor subject to the approval of the city council. The schools are supported by direct taxation on the city, and are also entitled to a portion of the revenue from the sale of school lands by the state. The curriculum includes geometry and trigonometry, but no higher mathematics; the elementary principles of science, mental, social, and physical, and Latin. No provision is made for the modern languages.

Of private schools there are Racine college, McMyren's academy, Saint Catherine academy, Home school, Passuer business college, and two schools attached to the Roman Catholic church. These institutions are reported as being in a flourishing condition.

MINNESOTA.

MINNEAPOLIS,

HENNEPIN COUNTY, MINNESOTA.

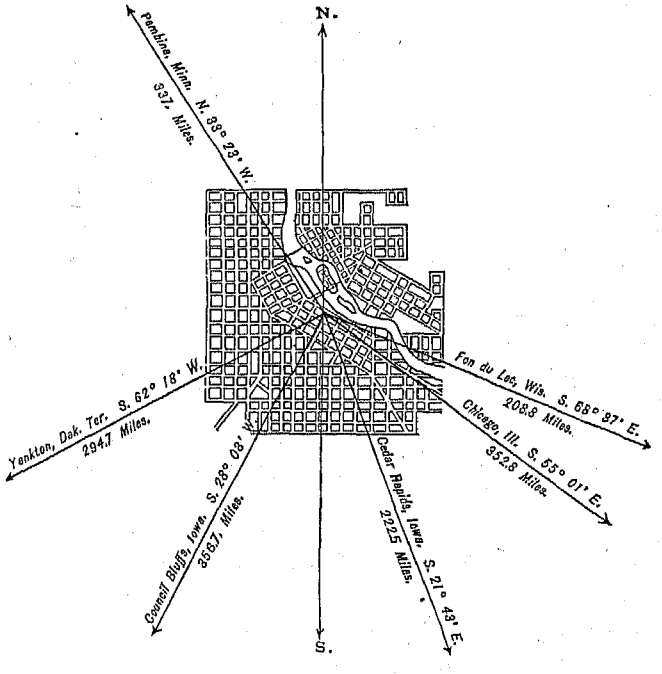
POPULATION

IN THE

AGGREGATE,

1860-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	.....
1860	2,564
1870	13,066
1880	46,887



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	25,291
Female	21,596
Native	31,874
Foreign-born	15,013
White	46,509
Colored	*378

*Including 2 Chinese and 14 Indians.

Latitude: 44° 58' North; Longitude: 93° 15' (west from Greenwich); **Altitude: 838.5 feet.**

FINANCIAL CONDITION:

Total Valuation: $23,415,733; per capita: $499 00. Net Indebtedness: $1,137,467; per capita: $24 26. Tax per $100: $1 46.

HISTORICAL SKETCH.

The honor of the discovery of the falls of Saint Anthony in 1680 is claimed by historians for two men, Accault, a French *voyageur* and explorer, and Louis Hennepin, a Catholic priest who accompanied Accault in his upper Mississippi explorations as companion, clerical assistant, and missionary. Hennepin claims the discovery for himself, and history has generally acknowledged his claim. For nearly 140 years after this time the falls remained in obscurity, being visited only by adventurous travelers like Carver or Pike. The establishment of a military

post at Fort Snelling (as it was subsequently called) in 1819 attracted renewed attention to the spot. In 1822 the water-power was first utilized by a small saw-mill built by the quartermaster of the fort in order to get lumber with which to finish the buildings at the fort; a grist-mill was subsequently added. No permanent settlement, however, was made until 1838. The previous year a treaty had been made by Governor Dodge, of Wisconsin, with the Sioux and Chippewas, by which the latter agreed to cede all their lands between the Mississippi and Saint Croix rivers, thus throwing a large tract open to settlement by white men. The instant that the news of the ratification of this treaty by the Senate reached the fort, which was not until June, 1838, claims were staked out around the falls and shortly a settlement was under way. In 1847, Mr. W. A. Cheever purchased for Boston parties a large share in the water-power, and steps were at once taken to improve it and to erect mills. In the summer of 1848 a dam was completed across the east channel of the river from Hennepin island to the main shore. By September, two saws were got in operation. With a good supply of lumber the prospects of the falls brightened wonderfully. The land had been sold at government sale this summer and bought by the parties holding the claims. The Saint Anthony town site was surveyed in the spring of 1849. Minnesota territory was organized during the winter of 1848–'49, and this gave a further impetus to the place.

At this time the territory west of the river, being an Indian tract, was not open to settlers, and the military reservation of Fort Snelling extended over most of the present site of Minneapolis. In 1849 Hon. Robert Smith, then a member of Congress from Illinois, and John H. Stevens secured permits from the government to occupy 160 acres each on the reservation. In the fall of that year Colonel Stevens began the erection of a house, the first one in what is now Minneapolis west. By the close of 1853 there were a dozen houses or more. The difficulty of obtaining a title to the land was a great hinderance to the growth of the village, and it was not until 1855 that the right of pre-emption, the same as on other government lands, was secured to the settlers by an act of Congress. Disputes among the settlers as to the real ownership of claims were not rare, but they were generally submitted to arbitration, and in the end, it is believed, the rights of all *bona fide* claimants were secured to them. From this time dates a more prosperous era for the struggling village.

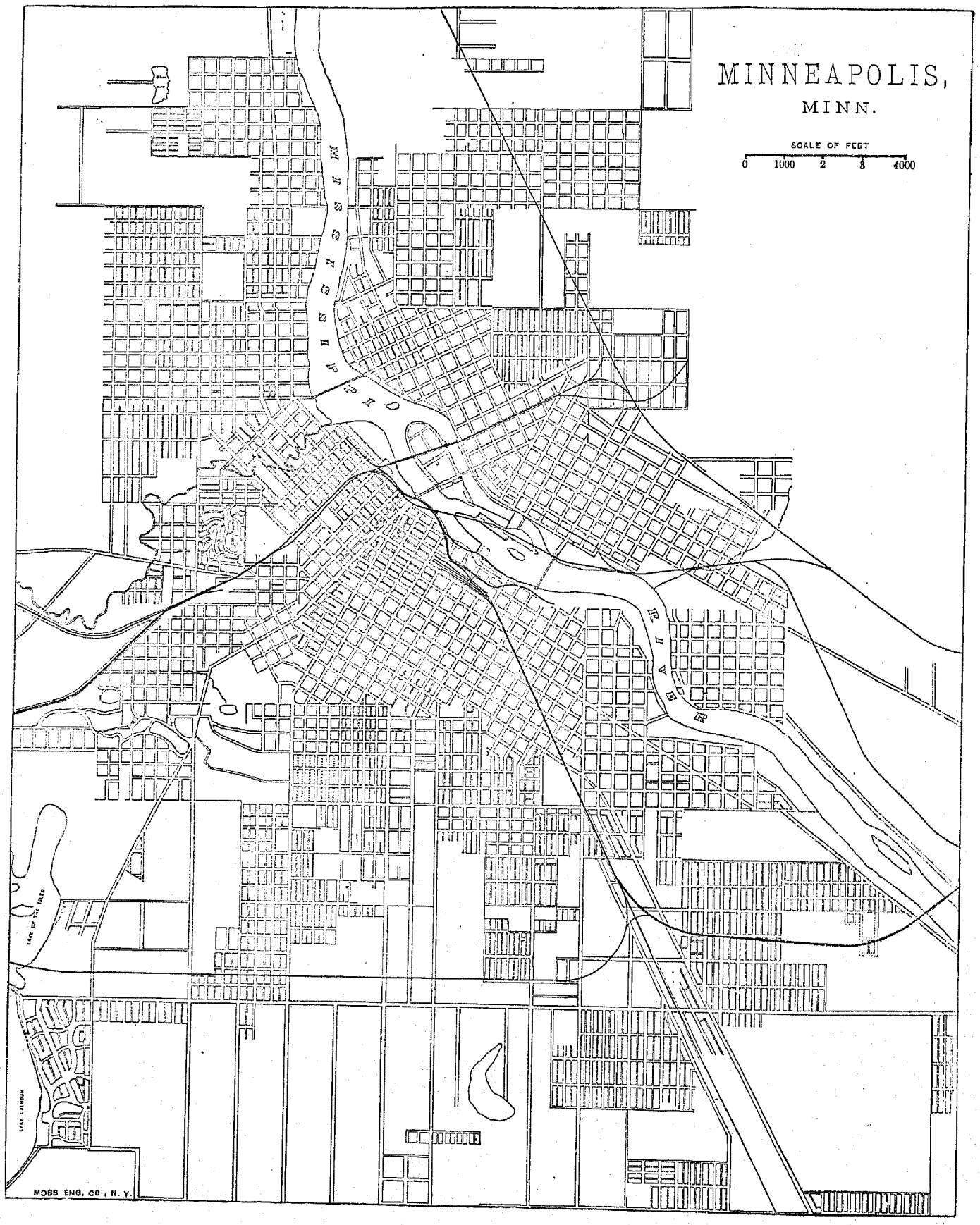
Hennepin county was organized on October 21, 1852, only 73 votes being polled from what is now Minneapolis and vicinity. This territory was for a short time known as West Saint Anthony. At a claim association meeting in 1851, at which a number of settlers were present, "Lowell" was adopted, but this did not suit, and later on it was changed to "Albion". Finally the editor of the Saint Anthony *Express* printed an article proposing the name Minneapolis, a compound of the Sioux *minne*, water, and the Greek πόλις, city. This did not at first sound well, but the editor adhered to the use of the word, and in a few weeks its sound became familiar, and was then adopted by all.

In 1854 John H. Stevens had his claim surveyed and laid out into a town plot. The Smith claim also was soon surveyed into blocks and lots. At the close of 1854 it was estimated that the town contained 100 buildings and about 1,000 inhabitants. In that year the first flouring-mill (not a permanent one), and also the first bridge, were built. During the earliest days of the village there had been great difficulty in getting back and forth across the river, teams having to ford it, which was possible only during low water. In 1851 Franklin Steele secured a ferry charter from the legislature, a bridge was built across the east channel to the island, and a ferry-boat soon plied on the west channel. In 1854 the "Minneapolis Bridge Company" was organized, and a fine wire suspension bridge was erected, the first bridge ever thrown across the Father of Waters. It was dedicated in January, 1855, with a great celebration. In March it was almost destroyed and had to be chiefly rebuilt. After that it did good service till 1877, when the present magnificent structure was erected in its place.

Minneapolis was first organized into a town government in 1858. The town organization lasted only until 1862, when, the discouragements and drawbacks resulting from the civil war leading many to think a more economical form of government could be adopted, the charter was repealed, and a simple township organization was substituted. After the close of the war the rapid growth in wealth and population necessitated some more effective form of government, and in 1867 a city charter was secured from the legislature. Saint Anthony had obtained a city charter in 1855. In 1873, by an act of the legislature, the two cities were consolidated under the name of Minneapolis, which by that time had become the more populous of the two.

In 1878 an explosion and fire in the milling district destroyed 6 of the largest flouring-mills, diminishing the flour-producing capacity of the city one-half. These were all rebuilt during the next two years with increased capacity. In June, 1880, the total capacity for the city was 25,000 barrels per day. No periods of depression worthy of note have occurred in the history of the city except that during the war time. The population of Minneapolis is largely made up of hardy, thrifty, intelligent New Englanders. There have been large accessions from the middle and other states of native-born people, and there is also a strong admixture of foreign population, the Scandinavian, German, Irish, and French predominating.

The growth and prosperity of Minneapolis have been almost wholly due to the natural advantages of its site. The power of the falls of Saint Anthony is enormous. The river, passing through the strata of rock on its bed of solid limestone, precipitates, even at a low stage, 450,000 cubic feet of water per minute down a declivity of 80 feet in a distance of less than a mile. Scientific computations have established the fact that the force represented is equal to 120,000 theoretical or 100,000 actual horse-power. The shores are of such a character as to allow


MINNEAPOLIS,
MINN.
SCALE OF FEET
0 1000 2 3 4000
MISSISSIPPI R.
RIVER R.
LAKE OF THE ISLES
LAKE CALHOUN
MOSS ENG. CO., N. Y.

canals to be excavated parallel with the stream to any desired extent, with the best of rock for their bottoms and sides; and the water can easily be led from the river into these canals. Another excellence, which adds to the availability of the power and the security of investments in it, is the superior foundation afforded by the hard limestone rock for dams and mills. These have never been swept away from their foundations, and the present dams, built almost a quarter of a century ago, remain perfectly intact and unimpaired. The rise of the river here is always gradual; destructive freshets do not occur. This is due to the level nature of the country at the sources of the stream, which is but one vast chain of lake reservoirs and sluggish streams, covering hundreds of square miles. The heaviest rainfalls are thus distributed over a vast area of country and drain into the main stream gradually.

The only drawback in connection with the water-power furnished by these falls is the danger that in time they will wear away. When the water is low the greater portion of it is very often drawn through the sluices, leaving the limestone ledge nearly bare, and subject to rapid disintegration by the action of frost. The precipitation of such a volume of water so constantly upon the underlying friable sandstone at the foot of the falls slowly undermined the overhanging ledge, large sections gave way from time to time, and the recession of the falls began to be looked upon with alarm. In 1868 a long tunnel was started lengthwise under the river with the intention of mitigating the evil, but the attempt was a failure and increased rather than lessened the danger. The survey of the falls in 1869 by Major General G. K. Warren, United States Army, drew the attention of the government to the necessity of arresting their destruction. An appropriation of $50,000 was accordingly made in 1870 and expended, but the results were not so satisfactory as to afford a sense of entire security. In 1872, and again in 1874, a board of engineers recommended the construction of a wall in the bed of sandstone beneath the ledge, 4 feet thick and 38 feet in height, the whole distance across the river, which would effectually prevent any further leakage. The plan was carried out, and a wall was constructed which has thus far sustained the ledge and prevented the ingress of water. In 1878 the apron was remodeled and rebuilt in its preset shape. In 1879 a sluiceway was built by the government at the west end of the apron, for the passage of logs down the river without damage to the apron. This sluice is 6 feet wide and 346 feet long. The falls of Saint Anthony being now in the hands of the government for preservation, there is an annual expenditure for repairs only.

MINNEAPOLIS IN 1880.

The following statistical accounts, mainly collected by the Census Office, indicate the present condition of Minneapolis:

LOCATION.

Minneapolis, the capital of Hennepin county, is situated on both banks of the Mississippi river, at the falls of Saint Anthony, in latitude 44° 58′ north, and longitude 93° 15′ west from Greenwich, 8 miles northwest of Saint Paul, at an average altitude of 838.5 feet above the level of the sea. Above the falls the river is navigable 80 miles for light-draft boats, there being 2 feet of water at its lowest stage. Below, it is navigable 8 months in the year, and with proper improvements would have 5 feet of water in the channel at all times.

RAILROAD COMMUNICATIONS.

Minneapolis is touched by the following railroads:

The main line of the Chicago, Milwaukee, and Saint Paul railroad runs from Minneapolis to Chicago via Saint Paul and Milwaukee.

The Breckenridge division of the Saint Paul, Minneapolis, and Manitoba railway runs from Saint Paul to Saint Vincent via Minneapolis, giving connection with Winnipeg.

The Minneapolis and Saint Louis railway connects at Albert Lea with the Burlington, Cedar Rapids, and Northern railroad, giving lines to Saint Louis and the South.

The Chicago, Saint Paul, and Minneapolis line of the Chicago, Saint Paul, Minneapolis, and Omaha railroad gives a line to Chicago via Madison, and to Sioux City via Saint Paul.

The Minneapolis, Lyndale, and Lake Calhoun railroad, a short road, runs to lake Harriet. These roads, with their various connections, reach every important point, east, north, west, and south.

TRIBUTARY COUNTRY.

The country in the immediate vicinity is divided between grain- and stock-raising. Minneapolis is the chief manufacturing and distributing point for the timber lands of the whole upper Mississippi valley. More than half of the surplus wheat produced in Minnesota is manufactured into flour at Minneapolis.

TOPOGRAPHY.

The soil is a sandy loam, underneath which there is a layer of gravel resting on limestone, and that on a soft sandstone. The official examinations made by the engineering department of the government shows the composition of the bed of the river at the falls as follows: first, 15 feet drift, containing beds of marl, sand, clay, gravel, and bowlders; second, 13 feet buff-colored sandstone; third, 13 feet best blue limestone, hard, disintegrating slowly on exposure to the air; fourth, 1.5 foot ash-colored, crystal limestone; fifth, 5 feet marlite, containing sand, and clay of blue, green, and yellow color, interstratified; sixth, 5 feet white sandstone, 5 feet above the water level. The dip of these strata is to the south.

The site of the city is gently undulating, and nearly level for from 1 to 2 miles back from each side of the river, at which distance rise chains of wooded bluffs of moderate height, on which there are many residences. The natural drainage is good, and there are no marshes.

CLIMATE.

The highest recorded summer temperature is 101°; the highest in average years, 94°; the mean summer temperature, 67°. The lowest recorded winter temperature, —40°; the lowest in average years, —30°; mean winter temperature, 12.5°. There are no adjacent waters, marshes, or elevated lands to produce a sensible effect on the climate. The only influence of the prevailing winds is to make the atmosphere dry.

STREETS.

Total length of streets about 200 miles, none of which are paved. The city engineer, in his report to the city council for the year ending April 1, 1880, said:

> I would here call attention to the necessity of adopting some more durable material for the construction of our roadways, sidewalks, and crossings than the ordinary dirt or mud roadway and wooden side- and cross-walks, especially for the business portion of our city. * * * To undertake the work of street-paving would, as a matter of course, necessitate the expenditure of considerable money, and owing to the great width of our streets the property-holders are very reluctant about commencing such an improvement. * * * I have returned to your honorable body during the past year special sidewalk assessments to the amount of $10,086 10. All of the above sidewalks were ordered constructed of pine lumber. Our sidewalks having been laid at different times are consequently in different conditions, some good, others fair, and a great many in very bad condition. * * * Resurveys and establishment of street lines by planting iron monuments have been carried out as far as possible the past working season with the regular force in the office.

It appears from the same report that during the year, $2,760 37 was spent in street-grading, of which $2,554 63 was spent on contract, and the rest on day work, and that the cost of street work, as done by the street commissioners during the year, was $17,669 66. Nearly all the sidewalks of the city are made of pine lumber. A few blocks have cobble-stone gutters, the rest being of earth. As fast as improvements are made shade-trees are set out. All streets outside the business section have about one-fourth of their width devoted to grass-plats, with foot-walks varying from 6 to 8 feet in width, running in the middle of the portion allotted on each side of the street. The trees are planted about 30 feet apart in the middle of the grass-plats, so as to alternate and make the distance between the trees about 17 feet (*i. e.*, a line connecting the trees would zigzag across the sidewalk). There is a decided preference for contract work for grading. Repairing is done by day work. The bridges owned by the city are as follows:

Table of bridges.

Kind of bridge.	Number of spans.	Length of bridge.	Length of span.
		Feet.	*Feet.*
Suspension, wire	1	675.0	.....
Arch, stone	5	383.5	.....
Pratt truss, iron	6	1,080.0	.....
Howe truss, wood	10	1,560.0	.....
Bent and braced truss, wood	9	354.0	.....
Arched culvert, stone	1	22.0	22
Do	1	25.0	25
Queen truss, wood	1	.....	25
Bent, wood	.....	160.0	.....
Queen truss, wood	1	.....	25
Pile, wood	.....	330.0	.....
Queen truss, wood	.....	.....	40
Howe truss, wood	1	70.0	.....
Queen truss, wood	1	40.0	.....
Bent, wood	.....	40.0	.....

The total length of horse-railroad track in the city is 9 miles; total number of cars, 21; of horses, 90; of men employed, 35; of passengers carried during the year, 987,267. The rate of fare is 5 cents.

WATER-WORKS.

The water-works are owned by the city. The Holly system of direct pumping is used, and an average pressure of 53 pounds is maintained. The annual report of the superintendent of water-works for the year ending March 31, 1880, shows the following facts: The total pumping capacity is 7,500,000 gallons per day; the expenditures of the water-works, exclusive of interest and current expenses to March 31, 1880, were $396,598 83. In 1879, 14,018.5 feet of water-mains were laid, at an expense of $10,188 14; previous to 1879, 84,483 feet had been laid, making the total pipe laid (exclusive of hydrant pipe) 18 miles 3,461 feet. The receipts from water-rates, penalties, etc., for the year were $16,008 72; an average of 2,628,569 gallons was pumped per day; and the total cost of maintenance, aside from the actual cost of pumping, was $5,615 51; the cost of pumping (including salaries, repairs, oil, and other supplies pertaining to the pumping-machinery) was $4,343 11.

GAS.

The gas-works are not owned by the city; their daily average production is 60,000 cubic feet, and the cost per 1,000 feet varies from $2 50 to $2 80. The city pays $2 50 per month each for 300 street-lamps.

PUBLIC BUILDINGS.

The city owns a city hall valued at $50,000, a city prison valued at $5,000, a pest-house valued at $3,000, and a number of engine-houses valued at about $75,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are no artificial parks, but in the suburbs there are small lakes, groves, etc., which supply their place. Within 3.5 miles of the city there are 4 lakes, each about 1.5 mile in length and the same in breadth; in them the water is clear and cool, and there are plenty of fish. The celebrated falls of Minnehaha are but 3 miles distant.

PLACES OF AMUSEMENT.

The city has 2 theaters, seating, respectively, 1,500 and 1,100, and a large lecture hall seating about 1,600. The theaters pay no license. There are no concert- or beer-gardens within the jurisdiction of the city.

DRAINAGE.

No reports as to the drainage of the city were received from the city officials. From the city engineer's report for the year ending April 1, 1879, it appears that previous to that time 12,069.5 feet of sewers had been laid, and from the report for the following year it does not appear that any have since been laid.

CEMETERIES.

There are 5 cemeteries connected with the city, as follows: *Lakewood*, containing 153 acres, situated 3.5 miles south from the city center; *Layman's*, 20 acres, 2 miles southeast from the city center; *Maple Hill*, 10 acres, 1.5 mile northeast from the city center; a Catholic cemetery and a Hebrew cemetery. The total number of interments in Lakewood cemetery from 1872 to 1880, inclusive, was 715. Within 30 hours after death the attending physician must issue a certificate as to cause of death, etc.; this is delivered to the health officer, who thereupon issues a burial permit; this in turn is given to the cemetery superintendent, who issues an order for burial. Graves must be from 5 to 6 feet in depth. In Lakewood cemetery the price of lots varies from $25 to $200; the cost of grading and sodding is $10 per lot; of the annual care of lot, $5 to $7 50; burial fees are $4 and $5, and the annual revenue is from $5,000 to $7,000. Every lot-owner is a proprietor under the general statute of the state, and all moneys received must be expended for the purchase and improvement of the grounds.

SANITARY AUTHORITY.

A city ordinance passed in 1873 provides that "The city council shall elect annually a physician who shall be a graduate of some college of medicine in good standing with his profession, and fitted by capacity and experience for the performance of the duties of the office to be health officer. Such health officer, together with two aldermen and two private citizens, to be appointed by the city council, shall be constituted a board of health, whose duty it shall be faithfully to execute all laws of the state relating to public health, and perform such other duties as shall be assigned to them by the city ordinance." At present the two "private citizens" are physicians, making in all 3 physicians on the board. The expenses of the board are mainly incurred for printing, disinfectants, burial of carcasses found, the salary of the health officer ($400) and that of the health inspector ($720), in all about $1,200 per year. The total expenditure on account of the health department last year was $1,834 06, which included quite a large expenditure for "dumping-ground". The board has no authority to expend money except by the permission of the city council granted from time to time, and it has no more authority during epidemics than at other

times. The health officer is *ex officio* president of the board. It is his duty "to make regular monthly sanitary inspections of the city as to all matters affecting the health of its citizens, and to make written reports of these inspections at each regular meeting of the board"; at the end of the year he makes to the city council a detailed statement of his operations during the year. The board meets monthly unless called oftener, and transacts its business in the usual way. One inspector is employed who expends his whole time in making inspections and seeing that nuisances are abated; he has police powers like any city policeman. When any nuisance, source of filth, or cause of sickness is found on private property, the board must order its removal within 24 hours by the owner or occupant; if this is not done in that time the board proceeds to have it done and charges the expense to the owner or occupant. If any person prevents the board from entering any building for the purpose of examining into and destroying, removing, or preventing any nuisance, etc., he may be punished, if convicted in the municipal court, by a fine not exceeding $50 and costs, and, in default of payment, imprisoned not more than 60 days, and the court may issue a warrant to the chief of police requiring him to accompany the board of health and aid it in the suppression of any nuisance, etc., that may be found. As to defective house-drainage, privy-vaults, cesspools, and sources of drinking-water, the inspector inspects as far as he is able to without complaint from citizens—always where complaint is made; as to defective sewerage, street-cleaning, etc., reports are made to the street commissioners, but the board has no authority over them. As to the conservation and removal of garbage, the board can take action only in case of nuisances arising. In case of death the attendant physician or, if there was none, the owner or occupant of the building, or nearest relative, must make a register of the cause of death, with the name, nativity, residence, sex, occupation, date, hour, place, and street of such death, and this register must be presented to the board of health within 30 hours after death; no interment shall be made without a permit from the health officer. Excrement must be removed in tight boxes and at night.

INFECTIOUS DISEASES.

Small-pox and scarlet-fever patients are isolated by stopping communications with the outside world from all persons occupying houses where the disease exists; the ordinances provide that if the patient can be removed to a separate house without danger it shall be done; if not, the persons in the neighborhood may be removed if thought necessary. The board takes no cognizance of the breaking out of contagious diseases in public and private schools, except to the extent of isolating the patients. There is no public pest-house. Vaccination is compulsory only for those attending school; it is not done at the public expense.

REPORTS.

The system of registration in case of deaths has been mentioned; that in case of births is similar, except that the items to be entered are the time, ward, and street of such birth, the sex and color of the child born, and the name and residence of each of the parents, and that 5 days are allowed for the presentation of the register. It is reported that the authority of the board is very limited.

In the annual report of the health officer, Dr. A. H. Salisbury, presented to the city council April 1, 1880, he says:

> That Minneapolis has thus far been able to maintain a good reputation for health is due to the natural healthfulness of the place, and not to the existence of any active and watchful health department. The department has not kept pace with the other branches of the city government in the improvements of the last few years. * * * It consists now (as in 1874) of a health officer, whose small salary only permits him to devote a part of his time to the duties of his office, and a health inspector, whose duties are so varied and numerous that he is unable to make a systematic sanitary inspection of any part of the city. * * * The three great requisites of health—pure air, pure water, and pure soil—were found here by the early settlers in absolute perfection. * * * The old inhabitants who knew the place in its primitive purity can hardly realize that it is no longer a sanitarium. They call it slander when told that their beloved city is no longer possessed of pure air, pure water, and pure earth, and is in danger of becoming notorious as an unhealthy city. At present our death rate is not above the average of cities of this size; but we are neglecting those sanitary measures which a little bitter experience has taught other communities to take. We have thus far escaped any extensive epidemic, but the fact that a very large percentage of the total mortality is from zymotic diseases, which alone form the real guide to the sanitary condition, renders our situation alarming. We are almost totally exempt from malarial diseases, a large relative proportion die from accident, while many deaths from tuberculous diseases are among the transient population. * * * The school buildings of this city, while not perfect from a sanitary standpoint, are perhaps as nearly so as public school buildings usually are. Some of them did lack proper ventilation, but that defect has been overcome. * * * If any reliance can be placed on the table of deaths presented with the report—and it is undoubtedly approximately correct—there has been a steady and alarming increase of the death rate during the past three years—9, 11, 14. At this rate, in three more years our death rate will equal that of the most unhealthy city of the Union. * * * Last year I caused an inspection of some houses where deaths had occurred to be made. The tabulated results go far to prove that these diseases, which cause almost one-third (31.54 per cent.) of our total mortality, are the result of impure air and water, and are therefore preventable. I feel positively sure that were the water from a few miles up the river distributed throughout the city, and every well filled up or pulled up, the use of cesspools and vaults prohibited, and sewers constructed wherever needed, the death rate from zymotic diseases, which is now 4½ per 1,000, would be reduced to 1 per 1,000, or even less. This would have saved during the last year 182 lives, or, at the usual computation, of a life at a $1,000, $182,000. * * * The total number of deaths last year was 744.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned by the city's own force by hand, under the direction of the street commissioners. The mayor reports that it is "well done", which differs somewhat from the intimation of the health officer on the same subject. The latter says in his annual report:

> The [health] department having no means under its own control of cleaning alleys, gutters, etc., had to depend upon the oftentimes slow movements of the street commissioners. But by considerable persistence on the part of Inspector Rich the streets and alleys were kept in a respectable condition until winter. Toward the spring the use of the dumping-ground was discontinued; considerable stable and other refuse was suffered to accumulate. New grounds having been procured, it is now being rapidly removed. Under the present plan the health department is held responsible for the sanitary condition of the streets, and yet has no means of keeping them in order, except to request the street commissioners, and then patiently await their slow pleasure.

Removal of garbage and ashes.—Scavengers remove all garbage. While awaiting removal it is kept in boxes or barrels, and it is allowable to keep ashes in the same vessel. The cost of removal is $1 per load. The health officer, in his report above mentioned, said:

> I discover that it has not been the custom to remove these substances [*i. e.*, refuse matter] from the city limits, at least only such portions as the farmers removed to be used as fertilizers. The scavengers and others employed in this business were in the habit of dumping their savory loads in any secluded spot they could find. Hoag's lake was being rapidly filled up with a most abominable variety of filth. I peremptorily discontinued the use of this vicinity as the city dumping-ground, * * * and succeeded in securing a spot near Chicago avenue, about 2 miles from the city; * * * during the summer and fall hardly any material of this kind was deposited elsewhere.

Three scavenger's licenses were taken out last year, bringing $21.65 into the city treasury.

Dead animals.—The mayor reports that scavengers deliver dead animals to bone-burners, receiving $1 each for removal, and that about 1,000 are annually removed. As the controller's report shows that the health department last year paid $33 25 to scavengers for removing dead animals, there would seem to be a discrepancy here unless the owners were found for the other 966.75 animals, which seems hardly probable.

Liquid household wastes.—The mayor further reports that waste water from sleeping-rooms, laundry waste, and kitchen slops are all disposed of in the same way, *i. e.*, emptied into cesspools and sewers, about two-thirds, in his opinion, going into cesspools or "dry wells", and one-third into sewers; where the former are used they receive the waste of water-closets; cesspools are cleaned out at midnight by city scavengers, emptied at the dumping-ground, and covered with lime. He says: "We are introducing on lines of street-mains public spigots, and filling up wells." In this connection the health officer's report says:

> In this city, as long as the soil remained unpolluted, the water from the * * * wells and springs was of the best quality, and, being easily obtained, was universally used. But gradually, as the population increased, the soil was made the depository for all the filth accompanying a high state of civilization, * * * and it is doubtful if there is now a well within the limits of the city, the water of which is as healthful as that of the Mississippi. * * * To determine * * * the comparative purity of the drinking-water taken from a variety of sources within the city, * * * the water from 7 wells was analyzed. There had been more or less sickness among those using the water from these wells, but in no case were they selected on account of the proximity of filth, and in this respect are no worse than the majority of wells in the city. * * * The analysis showed that 5 of the wells were absolutely unfit for use. These wells were all driven wells, so that impurities could only reach them after being filtered through the soil. * * * The result * * * establishes these facts: The well-water is generally impure, unwholesome, poisonous, and is becoming more so each year. * * * In order to ascertain, if possible, what effect bad hygienic surroundings had in causing or propagating zymotic diseases, I caused an inspection of some houses where deaths had occurred to be made. The houses inspected were not selected for the purpose of establishing any theory, but were taken from the reports of deaths as they occurred. * * * Of the 13 houses, occupied by at least 30 families, only 2 used hydrant water. All the others used well-water, or water taken from the river where it must necessarily be contaminated with sewage. * * * The wells were all shallow, being from 12 to 20 feet deep, and privies usually about 20 feet distant.

In an earlier part of this report Dr. Salisbury says:

> We have buried in our light, porous soil all manner of filth. Only within the last year or two has any thing been removed from the city. Privy-vaults and cesspools, whenever they become full, have been covered with a few inches of earth and new ones dug. The filth from stables and yards has been deposited in large masses as filling for low places. The filth from sewers and gutters has been used for the same purpose. Is it any wonder then that the water has become contaminated?

Human excreta.—About one-third of the houses of the city have water-closets; of these about one-half deliver into the public sewers, and one-half into cesspools. The dry-earth system is used by very few. Night-soil is removed at night to the dumping-ground, where it is covered with lime. It is not allowed to be used for manuring land within the gathering-ground of the public water-supply.

Manufacturing wastes.—Milling and wood-work make little offensive waste to require special care.

POLICE.

The police force is appointed by the mayor, confirmed by the city council, and governed by the mayor. The chief executive officer is the chief of police, with a salary of $1,500 per year; he has general supervision of the force, and is its responsible head and director. The rest of the force, with their salaries per year, are as follows: Captain, $1,100; sergeant, $1,000; detective, $1,100; 26 patrolmen, $840 each; jailor, $700; man stationed at stone pile, $840. Their uniform is of blue cloth with brass buttons, and they provide their own, the city furnishing

only hats and caps. The patrolmen serve 10 hours a day, being divided into three reliefs; the first roll-call is at 7.30 a. m., the second at 6 p. m., and the third at 9 p. m. They regularly patrol about 50 miles of streets. In 1880 there were 2,607 arrests. In the fiscal year ending April 1, 1880, there were 1,956 arrests, of which 416 were for intoxication, 258 for vagrancy, 238 for being found in houses of ill-fame, 138 for larceny, 108 for assault and battery, 78 for grand larceny, 58 for selling liquor to minors, 56 for keeping saloon open on Sunday, 50 for violating city ordinances, 47 for keeping house of ill-fame, and the rest for miscellaneous offenses; of these, 598 were fined in the municipal court, 576 discharged, 347 committed to the county jail, 105 sent out of the city, 98 dismissed, 57 had sentence suspended, 56 were remanded to authorities abroad, 65 bound over to await the action of the grand jury, and the rest bound over to keep the peace, or sent to the house of correction, the reform school, etc. In 1880 there were 1,157 station-house lodgers, against 731 in 1879. No free meals were given them. Special policemen are appointed by the mayor and confirmed by the council, because they are night watchmen, janitors, etc., or for special occasions when the regular force is insufficient. The cost of the police force for 1880 was $27,378 87.

PUBLIC SCHOOLS.

The government of the schools is vested by legislative charter in a board of education of 7 members, elected triennially by the people, on one general ticket, 1 from each ward and 1 at large, who serve without compensation, and who are chosen as non-partisans. The money necessary for the maintenance of the public-school system is derived partly from the general school fund of the state (a princely endowment of public lands), the residue from direct taxation. The amount of money necessary to be raised by taxation is recommended by the board of education and included in the general tax-levy for other purposes.

The Census of 1880 shows that there are 14,037 children between the ages of 5 and 21 in the city; the whole number enrolled last year was 6,142, with an average daily attendance of 4,248. The total cost of maintaining the schools for the year was $76,259 99, the per capita cost of the pupils enrolled being $12 42; of pupils, based on the average attendance, $17 95.

The financial statement of the board accompanying the report for 1880, covering 1879, from which also the above facts are quoted, shows the total receipts of moneys from all sources to be $117,015 90; disbursements, $105,644 54, including $13,946 23 for redemption of bonds and interest, and $3,263 26 for permanent improvements.

The property in possession of the board of education includes 14 school buildings, valued at $359,362, and unoccupied real estate worth $5,400. The high-school building, completed last year, cost $86,427. All this school property is by law exempt from taxation.

The university of Minnesota, the state university, is located here. At present it has 17 instructors, 159 college students, and 149 preparatory students. There are no tuition fees and no dormitories. The endowment is made up of public lands granted by Congress (1) to the territory, 46,000 acres; (2) to the state, 46,000; (3) to the College of Agriculture and the Mechanic Arts, 120,000; from which is to be deducted 10,000 not located, leaving a balance of 202,000 acres. The value of the grounds and buildings is estimated at $220,000.

Besides the above, there are several institutions of a private character, supported as denominational schools, and for various technical purposes, which have a reasonably good attendance.

FIRE DEPARTMENT.

The annual report of the chief engineer of the fire department for the year ending April 1, 1880, shows the following: The manual force of the present department numbers 59 men. This force took the place of 304 volunteers disbanded. The following apparatus is in actual service: 2 steam fire-engines, 5 two-horse hose-carriages, 1 one-horse hose-cart, 1 two-horse hook-and-ladder truck. The department has in service 20 horses, 12 of which the city owns. It has in service 10,000 feet of rubber hose, 2,000 of which may be considered second-class. The city has a fire-alarm telegraph which gives good satisfaction. There are 221 hydrants in the city. During the year the department responded to 130 alarms, an increase of 32 over the previous year. The companies averaged about 80 hours each on fire duty. As near as could be ascertained, the total loss by fire during the year was $56,945; insurance paid, $46,845; total insurance on property involved, $418,025. The total expenses of the department last year amounted to $41,136 10, of which $11,249 37 was for property purchased, and $29,886 73 for salaries and other expenses. The principal causes of fires and alarms were: supposed incendiary, 18; carelessness, 16; unknown, 15; defective chimneys, 14; sparks from locomotives, chimneys, etc., 10; chimney fires, 10.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Minneapolis for 1880, being taken from tables prepared for the Tenth Census:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	Average number of hands employed.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries	401	$9,002,650	4,702	457	185	$2,582,253	$24,274,023	$29,973,476
Blacksmithing (see also Wheelwrighting)	29	30,250	68	.....	.....	39,095	43,313	132,200
Boots and shoes, including custom work and repairing	34	153,050	100	4	.....	63,500	123,280	240,265
Boxes, fancy and paper	3	1,000	3	4	5	2,085	1,900	6,800
Bread and other bakery products	7	38,300	44	10	1	19,250	139,960	185,355
Brick and tile	6	21,000	108	.....	.....	37,350	11,200	65,600
Carpentering	13	30,700	164	.....	.....	88,500	188,800	343,000
Carriages and wagons (see also Wheelwrighting)	13	40,100	102	.....	.....	56,930	78,300	174,700
Clothing, men's	25	105,675	190	40	5	118,150	197,750	386,700
Cooperage	11	68,000	282	.....	35	148,014	235,514	447,152
Flouring and grist-mill products	29	3,820,500	721	.....	.....	555,000	19,011,230	20,502,305
Foundery and machine-shop products	15	474,700	380	.....	.....	200,500	451,040	807,783
Furniture (see also Mattresses and spring beds)	14	126,300	190	2	1	89,450	125,000	273,000
Furs, dressed	4	7,700	3	16	.....	3,000	15,200	25,800
Liquors, malt	3	180,000	58	1	.....	25,083	106,870	190,678
Lock- and gun-smithing	4	2,200	7	.....	.....	3,050	2,200	10,700
Lumber, planed (see also Sash, doors, and blinds)	6	66,500	81	.....	.....	32,742	49,950	131,577
Lumber, sawed	16	2,405,000	877	13	30	374,500	1,049,430	2,740,848
Marble and stone work	5	16,300	40	.....	.....	17,050	22,300	53,000
Mattresses and spring beds (see also Furniture)	3	9,000	17	3	.....	7,000	17,500	37,000
Mineral and soda waters	5	10,000	14	.....	.....	5,400	12,300	23,200
Photographing	6	25,500	12	4	.....	7,880	5,100	23,370
Plumbing and gasfitting	3	26,500	35	.....	.....	17,100	49,300	79,000
Printing and publishing	14	142,000	196	10	13	123,900	104,000	321,500
Pumps, not including steam pumps	3	5,500	17	.....	.....	7,500	12,000	24,500
Saddlery and harness	14	36,950	71	.....	.....	33,560	55,100	118,400
Sash, doors, and blinds (see also Lumber, planed)	5	201,000	240	.....	35	112,746	374,000	601,193
Slaughtering and meat-packing, not including retail butchering	4	39,000	37	.....	1	14,300	197,990	270,000
Tinware, copperware, and sheet-iron ware	21	37,200	88	.....	.....	42,870	87,175	174,300
Tobacco, cigars and cigarettes	5	12,050	28	.....	.....	16,250	19,400	52,700
Watch and clock repairing	14	7,475	22	.....	1	11,300	7,480	30,400
Wheelwrighting (see also Blacksmithing; Carriages and wagons)	9	8,600	29	.....	.....	14,541	12,761	36,377
All other industries (*a*)	58	846,800	472	350	58	291,528	866,671	1,463,467

a Embracing agricultural implements; awnings and tents; bags, other than paper; bookbinding and blank-book making; boxes, wooden packing; brass castings; brooms and brushes; carpets, rag; coffee and spices, roasted and ground; confectionery; corsets; cotton goods; cutlery and edge tools; drain and sewer pipe; dyeing and cleaning; electroplating; files; flavoring extracts; furnishing goods, men's; glass, cut, stained, and ornamented; gloves and mittens; hosiery and knit goods; iron work, architectural and ornamental; leather, dressed skins; looking-glass and picture frames; masonry, brick and stone; models and patterns; musical instruments, organs and materials; oil, linseed; oil, lubricating; painting and paperhanging; paper; pickles, preserves, and sauces; saws; shirts; show-cases; soap and candles; steam fittings and heating apparatus; stencils and brands; tools; trunks and valises; washing-machines and clothes-wringers; wirework; wood, turned and carved; and woolen goods.

From the foregoing table it appears that the average capital of all establishments is $22,450 40; that the average wages of all hands employed is $483 20 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is $68,321 78.

SAINT PAUL,

RAMSEY COUNTY, MINNESOTA.

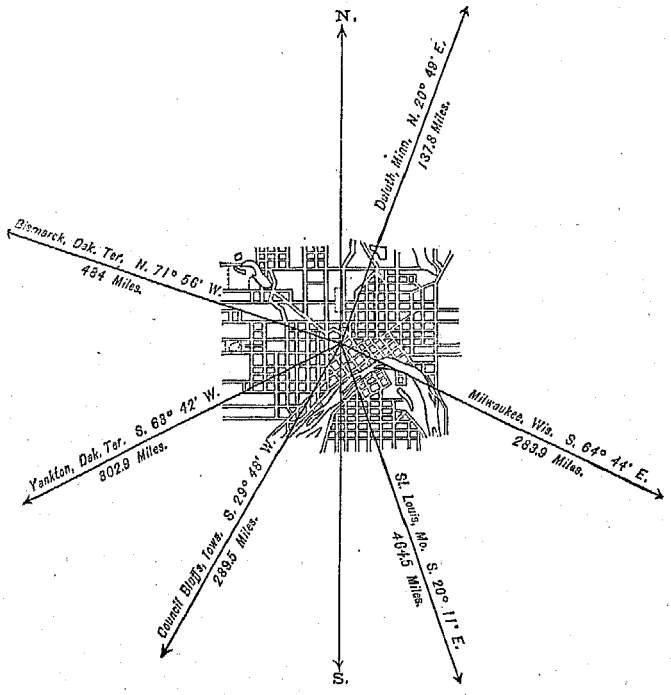
POPULATION

IN THE

AGGREGATE,

1850-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	1,112
1860	10,401
1870	20,030
1880	41,473



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	22,361
Female	19,112
Native	26,398
Foreign-born	15,075
White	40,971
Colored	*502

*Including 8 Chinese and 26 Indians.

Latitude: 44° 56′ North; Longitude: 93° 5′ (west from Greenwich); **Altitude: 800 feet.**

FINANCIAL CONDITION:

Total Valuation: $24,000,000; per capita: $579 00. Net Indebtedness: $1,526,715; per capita: $36 81. Tax per $100: $1 40.

HISTORICAL SKETCH.(a)

The first human habitation on the present site of Saint Paul was built in 1838. It was a mere hovel, built by a squatter named Pierre Parrant, whose object was to get just outside the lines of the Fort Snelling reservation, where he could sell whisky to the soldiers and Indians in a secret way.

At about the same time, Congress ratified the treaty with the Sioux, which threw open the lands east of the Mississippi to settlement, and a few squatters, principally refugees from the Red River settlement who had been driven away from there by calamity, settled on the lands now included in the limits of the city. In 1841 a small log chapel was built by a Roman Catholic priest from Dubuque, named Lucien Gaultier. It was named by him the "chapel of Saint Paul", and thus gave its name to the little village.

a By J. F. Williams, esq., secretary of the State Historical Society.

In 1847 the proprietors of the lands now in the central part of the city caused a tract of land of about 80 acres to be surveyed into lots, and the plat was filed for record under the name "town of Saint Paul". It was then included in the boundaries of Wisconsin territory. On May 29, 1848, Wisconsin was admitted as a state, and that portion of the former territory on which Saint Paul stood was left outside the new state boundary, and without any government whatever. Its inabitants at once took active measures to secure a territorial government, and Congress passed an act organizing the territory of Minnesota, with Saint Paul as its capital. This act was approved March 3, 1849.

At this time there were only 30 buildings in the town and not over 200 inhabitants, but the organization of the territory and location of the seat of government attracted crowds of settlers, and the town grew very rapidly. Within 3 or 4 years it had become a populous and thriving point. A town charter was granted it by the first legislature in 1849, and a city charter by the legislature of 1854. By a census taken in 1855 there was a population of 4,716.

The rapid growth of Saint Paul and of the territory produced one of the most remarkable periods of speculation and inflation, especially in real estate, ever known in American history. It began to be marked in 1854 or 1855; grew intense in 1856, and in 1857 the wild speculative frenzy had grown to be a perfect madness, which appeared to affect all classes. In August of that year it met with a sudden check by the financial panic which began in New York city. The revolution affected Saint Paul with extreme severity, and a trying period of depression set in. There were at that time little capital, limited trade, but few industries, and no accumulated wealth. The population of the city decreased, empty dwellings and vacant stores by the score attested to the severity of the times, and it was three years before perceptible recovery began. During this period there were scarcely any new buildings erected, and the tax duplicate shows a remarkable falling off in the assessed valuation. Real estate was utterly unsalable.

Some improvement began to be noticed in 1860, but was of transient duration, as the secession movement soon produced another period of depression, and the years 1861 and 1862 were years of extreme distress. The Indian massacre in August, 1862, which depopulated all the western part of the state, farther intensified it. The issue, about this time, of "greenbacks" by the government soon produced another period of inflation and great ease in the money market. The expenditure of large sums by the War Department, the building of railroads, etc., gave a considerable revival to business.

From 1865 to the fall of 1873 was one of the busy and prosperous periods of the city. Numerous fine and costly public buildings, business blocks, dwellings, schools, churches, etc., and works of improvement were constructed. Real estate became almost as inflated as during the "kiting" days of 1857. But the financial revulsion in the fall of 1873 again utterly prostrated every thing. A period of depression ensued, not so severe and disastrous as that from 1857 to 1862, but very trying and gloomy. It lasted, with more or less stagnation, until 1879, when business recuperated and real estate again became active and buoyant. Since 1879 the growth of the city has been remarkable. Its increase of population, business, capital, etc., has been unprecedented. The number of buildings erected, their size and costliness, etc., have been a subject of remark.

Saint Paul has never been visited by any widespread, devastating conflagrations, but in its early days it suffered frequently from fires very damaging and depressing in their consequences. In early days the buildings were mostly "balloon" frames, and there being no effective fire department, when a fire occurred whole blocks would be swept away by the flames. In 1856, '57, '58, '59, and '60—indeed almost every year from 1855 to 1865—were considerable fires. Old settlers have seen Third street, the principal business street of Saint Paul, leveled from one end to the other, a distance of more than a mile, both sides. Yet all these burnt spaces were soon covered with fine substantial blocks of stone or brick.

The early population of Saint Paul (1838–'47) was largely composed of French Canadians and "Red River French", the latter being refugees from Switzerland. They intermarried to a considerable extent with the native races, and a heterogeneous class of half-breeds sprang from these unions. In Saint Paul, prior to 1849, more than half of the population was Indian, full and half blood. The old *voyageurs* who were employed by the fur companies had large families of these mixed bloods. They nearly all spoke three languages—English, French, and their own mother tongue, Sioux, Ojibwa, Cree, Kooberias, etc.

With the opening of immigration in 1849 the population rapidly changed. There was a strong influx of New England people. Ohio and Pennsylvania also contributed largely to the new town. But for several years French Canadians were quite a large element of the population. A knowledge of the French tongue was almost indispensable for a tradesman then. But gradually the French-speaking population to a considerable extent gave way to other races; its importance, politically, declined.

On the census of 1850 there were so few German names as to attract the notice of those studying such statistics. But by the year 1855 there began to be a strong German element in the population. In 1857 a very considerable proportion of the names were German. The census of 1860 showed a still larger proportion. Fully one-third of the foreign-born population then were Germans.

From 1856 to the close of the war the Irish population was considerable. It was perhaps greatest in 1867, when there was occasion for a large body of laborers in the city for public improvements. It has been thought

recently by those studying the subject that the percentage of Irish population is not so great now as it was 15 or 18 years ago. They furnished the bulk of the laborers at that time: now it is noticed that Swedes are the laborers most usually employed. Laborers' boarding-houses and other strongholds of the Irish population at that time are observed to have passed into the hands of the Scandinavians; still there is a large Irish population.

During the last ten or twelve years there has come in a considerable population of Poles and Bohemians.

SAINT PAUL IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Saint Paul:

LOCATION.

Saint Paul lies on the left bank of the Mississippi river, 2,082 miles from its mouth. A recent extension of its corporate limits includes a considerable area on the west side of the river, the two sections being connected by a free bridge. Its latitude is 44° 56′ north, and its longitude 93° 5′ west from Greenwich. The altitude has a range of 360 feet between highest and lowest points above sea-level, the station of the Smithsonian Institution here being 800 feet above sea-level. The draft of water in the river is from 12 to 15 feet, with a naturally good levee front, and deep water extending about 2 miles. The current here flows from 3 to 4 miles per hour.

RAILROAD COMMUNICATIONS.

Saint Paul has the benefit of the following railroads:

The Chicago, Milwaukee, and Saint Paul railroad, between the first- and last-named cities.

The Chicago, Saint Paul, Minneapolis, and Omaha railroad, running from Saint Paul to Sioux City on the southwest, and to Chicago on the southeast.

The Minneapolis and Saint Louis railroad, from Saint Paul, connecting at Albert Lea with the Burlington, Cedar Rapids, and Northern railroad, giving lines to Saint Louis, etc.

The Northern Pacific railroad (Saint Paul division), from Saint Paul to Brainerd.

The Saint Paul and Duluth railroad, running between the two cities named.

The Saint Paul, Minneapolis, and Manitoba railroad, running from Saint Paul to Winnipeg, with numerous connections and divisions. These roads represent over 4,000 miles of track, and have added in no small degree to the importance of the place.

TOPOGRAPHY.

The site of Saint Paul is rolling, owing not to an upheaval of the rocks, but to the present position of the drift materials. The rocks lie practically horizontal, but have been numerously eroded by streams. The soil is mostly loam, underlaid by a clay drift. The rock formations at Saint Paul are numerous and variable. Within the county (Ramsey) the following substances are found: Saint Peter's sandstone, Lower Trenton limestone, Green shales, Upper Trenton, drift, and loess loam. Natural drainage is toward the Mississippi on the south.

CLIMATE.

The highest recorded summer temperature (1874) is 99°; highest summer temperature in average years, 95°. Lowest recorded winter temperature (1879), —39°; lowest winter temperature in average years, —27°.

The prevailing winter winds are from the northwest, and lower the temperature; the summer winds are from the southeast, and increase the heat.

STREETS.

Saint Paul contains 325 miles of streets, of which about 2 miles are paved with broken stone and about 1 mile with wood. The city engineer, L. W. Rundlet, esq., says: "We have no well-graveled streets, on account of the difficulty of obtaining good material." The wooden pavement is the easier kept clean; some of this has been laid 8 years, and during the last 2 years has needed constant repairs.

Some sidewalks are laid with asphalt and flags, but the majority are constructed of wood, being of 2-inch plank, 8 inches wide, laid crosswise and spiked to stringers, the outer stringers of 8- and 10-feet walks being 3-inch planks 16 inches deep.

Gutters are paved with stones laid in courses, with a limestone curb set on edge. The best gutters have a curbstone 6 inches wide and 18 inches deep on the edge nearest the property. Shade-trees are usually set inside the lot line, in streets where there are no grassed places on the outside edge of the sidewalk; but when a space is left for grass, they are planted just outside of the sidewalk line. The streets are from 60 to 66 feet wide and are without grassed centers. Street repairs are made by the day, which practice has always prevailed. No steam stone-crusher or roller is used at present, though the purchase of one is contemplated.

ST. PAUL,
MINN.
LAKE COMO
LAKE PHALEN
MISSISSIPPI RIVER

The city has 11 miles of horse-railroads; 26 cars and 150 horses are used; 55 men are employed; and during the census year 975,102 passengers were conveyed, the rate of fare being 5 cents.

The omnibus lines of Saint Paul run 46 vehicles, use 44 horses, employ 25 men, and carry 100,000 passengers per annum, at fares of 25 cents.

WATER-WORKS.

The total cost of the works for water-supply was $500,000, and they are the property of a private corporation. The water is brought in by gravity from lakes in the rear of the city, and has a head of 174 feet above low water of the river. The water is furnished through 24 miles of pipe. About 120 water-meters, of the Ball and Fitts pattern, are used; all work well.

GAS.

The gas-works are also owned privately. The daily average product of gas is from 60,000 to 70,000 feet. The net charge per 1,000 feet is $3 40. The city pays $30 per annum for each of the 250 street-lamps. The income from meter-rates is from $1,500 to $1,600.

PUBLIC BUILDINGS.

The city owns and occupies the city hall and the market-house, costing, respectively, $30,000 and $80,000; the former, notwithstanding its cost, is said to be a poor building.

PUBLIC PARKS AND PLEASURE-GROUNDS.

Saint Paul's one large park is situated in the northwest part of the city, borders on the west side of lake Como, and covers 240 acres. It is as yet in a state of nature; the land is rolling, and is covered with trees and underbrush. Its total cost was $100,000. The Saint Paul rifle park is situated in the eastern part of the city, and the state-fair ground and Saint Paul driving-park are in the western part. There are also 3 small parks, of about 3 acres each, which have been donated to the city, and are more or less improved. The parks are under the control of the council, except one of the three small parks (Rice), which by an ordinance is placed under the control of the mayor.

PLACES OF AMUSEMENT.

Saint Paul supports one opera-house, seating 1,100; the Atheneum, or German theater, seating 800; a concert-hall, seating 800; and the Varieties, seating about 400. The opera-house and Varieties only pay a license to the city, the former $75 and the latter $50 per year. There is also a beer-garden, with perhaps 25 tables.

DRAINAGE.

The sewerage works are carried out in accordance with a general plan, so far as main lines are concerned, but lateral sewers have to be adapted somewhat to local requirements. Owing to the peculiar geological formation, a good many sewers are tunneled through the soft sandstone at less trouble and expense than if made in open cut. Such tunnels are driven to the requisite width, are 6 feet high and lined with brick. No information is furnished of the extent or details of construction. The outfall is to the Mississippi river. The mouths of the sewers are all exposed except during high water. Ventilation is provided for by holes in the manhole covers. The only deposits that have been troublesome are gravel and sand washed into the sewers by heavy rains. The sewers are flushed with water from the fire-hydrants. No account is kept of the removal of heavy deposits, but the cost is estimated by the city engineer not to exceed $200 per year.

Main sewers are partially paid for out of a sewerage-bond fund. The whole cost of lateral sewers is assessed on the abutting property without regard to size or cost of the sewers. Assessments are laid on the basis of frontage.

The average depth of sewers is from 12 to 15 feet, and their cost per foot has been as follows: For brick sewers in open cut, 20 inches in diameter, $3; 24 inches, $3 25; 30 inches, $4; 36 inches, $5; 60 inches, $10 50. For sewers tunneled in sand rock, the bottom lined with brick 4 inches thick, tunnel 6 feet high by 2½ feet wide, $1 05 to $2 25 per foot. Sewers of vitrified-clay or cement pipe, 9 inches, $1 50 to $2 25; 12 inches, $1 75 to $2 50; 15 inches, $2 to $2 75 per foot. Catch-basins of brick, 8 to 12 inches thick, with cut-stone covers, $90 to $125 each. Manholes of brick, 8-inch walls, with iron covers, $70 to $80 each. Catch-basins quarried out of soft sand-rock, $150 to $175 each. Manholes, $130 to $150.

HOUSE-DRAINAGE.

The city ordinances require a plan to be filed with the city engineer before house-drainage work is begun. This must show the whole course of the proposed drain from its connection with the sewer to its terminus within the house, with the location of all branches, traps, and fixtures to be connected with it. Unless the proposed plan conforms in every respect to the city ordinances no permit is given to connect with the public sewers. Every private drain is required to have a trap with at least one inch water-seal, with a fresh-air inlet between the trap and the soil-pipe. The soil-pipe within the house must be continued above the roof and left open. The city engineer

or his agents are authorized to enter all premises drained to the public sewers, to ascertain whether the provisions of the ordinances are complied with. If a private drain connected with the public sewers becomes clogged, obstructed, broken, or out of order, or detrimental to the use of the sewer, or unfit for the purposes of drainage, and the owner or occupant of the property neglects or refuses to make suitable repairs, they may be made by the board of public works at the expense of the owner of the property. The board of health may compel sewer connections to be made from any house or lot whenever in its opinion such connection shall be necessary. No one but a licensed drain-layer is allowed to lay any part of a private drain connected or intended to be connected with a public sewer.

CEMETERIES.

There are in Saint Paul 2 cemeteries proper: *Oakland*, containing 80 acres, and *Calvary* (Catholic), containing 40 acres. There are also 6 graveyards, small in size, belonging chiefly to German or Scandinavian Lutheran or Jewish churches. Oakland cemetery, situated in the northern part of the town, was organized under the original act for the "Formation and Regulation of Cemetery Associations", in 1858. It is vested in and controlled by a rotating board of trustees, elected annually by the lot-owners. No profits or dividends accrue to any one. No interment is allowed to take place without a permit from the health officer. Graves of adults are required to be 5 feet deep, and but one body may be buried in the same grave. No vaults are permitted above or even partly above the surface of the ground. The receiving-tomb is seldom used between April 1 and December 1, and even then bodies are kept here but a day or two; but from December 1 to April 1 bodies may remain, and ordinarily do remain, till the advent of warm weather before interment. The perpetual care of all lots sold is included in the price paid for them, and the system embraces minute and continued improvements of the whole grounds. The method employed is closely modeled upon that of Spring Grove cemetery, Cincinnati. No lots are owned in fee simple, but virtually in partnership with the entire list of lot-owners. No transfer of any lot is allowed without the consent of the trustees, and every lot-owner must conform to the rules and by-laws of the association. A sinking fund is in process of accumulation for the perpetual care of the cemetery after all other sources of revenue shall have ceased. In the Catholic cemetery and the small graveyards the system is not so strict.

MARKETS.

In 1880 Saint Paul built a fine market-house, costing about $80,000, neatly fitted with stalls, and having a stand for wagons with sheds separate from the building. On account of the burning of the state capitol, the market-house has been used for the accommodation of the state officers. The public market has heretofore been held on a square with temporary sheds for the accommodation of hucksters, all under the control of a market-master.

Wagons from the country pay a rental of 10 cents per day for the privilege of standing at the market, or 50 cents per week. In the old market, butchers paid from $100 to $150 for their stalls for the season. The total rental of the market for 1880 was $1,200. The market is ordinarily open from 4 a. m. to 12 m.

The wholesale trade of the city in meat, poultry, fish, etc., is done by commission merchants. In the case of fish, the retail merchants have their orders filled directly from the East and lake Superior in refrigerator cars.

SANITARY AUTHORITY—BOARD OF HEALTH.

The board of health has charge of the sanitary interests of the city. It is an independent body, composed of the city physician, 4 aldermen, and the city engineer. The physician of the board is elected by the city council, the 4 aldermen are appointed by the president of the council, the engineer is elected by the council and board of public works, and the inspectors are appointed by the council and the physician. The annual expenses of the board are $500 for the salary of the city physician and $840 each for 2 inspectors. With the consent of the common council the board may during an epidemic increase its expenditures to any extent demanded by the exigencies of the occasion. In the absence of epidemics the board has power to remove nuisances and to purify dwellings and premises; may require the police to execute its orders; may require reports as to the condition of all public buildings; may also require clergymen to report marriages, physicians deaths, and coroners their verdicts; and has jurisdiction over cemeteries, over the removal of dead animals, etc. During epidemics, in the words of the ordinance:

> And in the presence of great and imminent peril to the public health in said city by reason of impending pestilence, it shall be the duty of said board to take such measures, and to do and order and cause to be done such acts, though not herein elsewhere or otherwise authorized, and make such expenditure (having first for said expenditures obtained the consent of the common council of the city of Saint Paul) as it may in good faith declare the public safety and health demand. And such peril shall not be deemed to exist except when and for such period of time as the mayor of the city of Saint Paul, together with said board, shall declare by proclamation the same to continue or exist.

The executive officer of the board is chief sanitary superintendent. He presides over the meetings, directs the inspectors, and attends to the duties of city physician. The board meets once a month, or on call of the president. The 2 inspectors employed are not physicians, but have police powers. Inspections are made regularly. In the spring a general cleaning up is required, and it is the duty of the inspectors to look up and abate all nuisances. When nuisances are reported they are investigated, and, if found to require it, are ordered to be abated. If this is not done the delinquent parties are arrested and fined. The inspectors have charge of the inspection and correction of defective house-drainage and sources of drinking-water, and especially of privy-vaults and cesspools.

But little has been done in regard to defective sewerage. House connections are inspected when laid, and arrangements for ventilation are required. Street-cleaning is done by the city's own force under charge of the street-inspectors. None is needed and no care is ordinarily taken by the board as to the handling of garbage. When, however, it does become a nuisance, the inspectors order its removal. As to the dead, no body is allowed to be buried, removed, received, or passed through the city without a written permit. There has not been any trouble concerning the pollution of streams, except some small ones by slaughter-houses, which the board of health compelled the owners to remove.

Small-pox patients are removed to the pest-house, but scarlet-fever patients are not isolated. In one or two instances schools have, on the breaking out in them of contagious diseases, been suspended for short periods. The pest-house is situated near the poor-farm, about 3 miles northwest of the center of the city. Vaccination is compulsory on all children attending the public schools. The board reports to the council, and these reports are published in the official proceedings.

The city engineer adds the following note to the foregoing information:

> The medical profession are taking a great interest in the subject [public-health authority] at the present time on account of prevalence of typhoid fever and kindred diseases, and I think the board of health will be reorganized on a firmer basis, having more physicians, etc.

MUNICIPAL CLEANSING.

Street-cleaning.—Streets are cleaned by the city with its own force, wholly by hand. Wooden-paved streets are cleaned on an average once in ten days. On other streets the gutters are cleaned out and the ruts filled whenever it is absolutely necessary, depending somewhat on the amount of travel on the particular street. "Most of our streets have not been properly graded or macadamized, and we only try to keep them passable; in dry weather they are pretty good; in wet weather, muddy." About $18,000 per year is expended in this work. The street-sweepings are deposited on low streets, below grade, where there is not much travel, and on low bottom-land near the river.

Removal of garbage and ashes.—Garbage is removed by scavengers, who make this their business, employed by householders for the purpose. It is mostly fed to cattle and swine. Ashes also are removed by householders. Soap factories take the wood ashes, while coal ashes are used for filling. The statement is made that the system has worked as well as could be expected, but, as the city is rapidly increasing in size and population, the ordinances in the future will undoubtedly be more strictly enforced than at the present time.

Dead animals are removed by the scavengers, who are allowed by ordinances a price for each animal, as $1 for a horse, 50 cents for a cow, hog, dog, etc. The carcasses are generally taken to rendering establishments outside the city limits. The service is said to be very well performed, and to be quite satisfactory.

Liquid household wastes.—Only a small part of Saint Paul is sewered, but where sewers exist they are very generally used. Where there are no sewers, dry wells, cesspools, and privy-vaults are used. The cesspools are generally porous, and, in the few cases where they are provided with overflows, these deliver generally into water-courses, and do not, as a rule, receive the wastes of water-closets. No household waste is allowed to run into the street-gutters. The opinion is expressed that there is more or less contamination of drinking-water by imperfect drainage.

Human excreta.—The proportion of houses having water-closets is small, but most of the recently erected houses have closets. About one-third of the water-closets deliver into the public sewers. There are no regulations as to the construction of privy-vaults, and it is said that not one in a hundred is water-tight. When the sanitary inspector orders the emptying of a privy-vault it must be done. The scavengers performing this work must use tight carts. The dry-earth system is used only to a very slight extent. Night-soil is dumped into the Mississippi, not being used for manure.

Manufacturing waste.—One soap factory and one brewery connect with the sewer near its outlet, but have given no trouble, and few manufactures produce liquid and solid wastes.

POLICE.

Saint Paul's police force is appointed and governed by the mayor. The chief executive officer is the chief of police. He has general supervision over the whole department, and his salary is $1,500 per annum. The rest of the force comprises 1 captain at $1,200, 2 sergeants at $1,000 each, 2 detectives at $1,000 each, 2 court officers, 1 jailer, and 27 patrolmen at $840 each. The uniform is the same as that worn by the New York metropolitan police force, and is provided by the men themselves. Patrolmen serve 10 hours per day, and patrol all of the city's streets. During 1880, 2,441 arrests were made, chiefly for assault and battery, disorderly conduct, drunkenness, and vagrancy. For the same period property to the amount of $5,329 was stolen and reported to the police, of which $4,184 was recovered and returned to the owners. During the same year there were 2,710 station-house lodgers, against 1,983 for the preceding year. No free meals were given them. The force co-operates with the fire department to the extent of its ability, and with the health department by reporting all nuisances, etc., to the health officers. Special policemen are appointed only in case of emergency. The cost of the force for 1880 was $42,000.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Saint Paul for 1880, being taken from tables prepared for the Tenth Census:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	Average number of hands employed.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries	593	$3,738,791	3,930	1,092	208	$2,254,340	$5,719,067	$10,286,363
Awnings and tents	3	11,750	8	10	4	7,760	90,000	129,000
Blacksmithing (see also Wheelwrighting)	18	7,500	31	.....	.....	15,427	10,450	53,700
Bookbinding and blank-book making	4	43,500	32	17	8	25,541	17,709	68,941
Boots and shoes, including custom work and repairing	41	275,150	286	18	21	158,162	421,198	716,733
Boxes, cigars	3	4,500	6	3	.....	2,602	4,750	9,500
Bread and other bakery products	20	64,200	52	1	4	28,095	171,000	240,800
Brick and tile	5	13,000	74	.....	2	15,322	8,027	32,200
Brooms and brushes	4	6,500	12	1	.....	7,100	13,600	29,600
Carpentering	58	127,475	622	.....	.....	268,516	568,865	960,042
Carpets, rag	3	210	.....	.....	1	150	800	1,850
Carriages and wagons (see also Wheelwrighting)	6	103,000	105	.....	.....	57,760	82,500	200,000
Clothing, men's	22	264,500	154	485	3	210,490	553,050	974,200
Clothing, women's	9	31,200	1	80	.....	24,100	93,350	147,900
Coffee and spices, roasted and ground	4	106,500	11	6	9	11,350	107,750	153,500
Confectionery	9	63,000	41	5	1	23,010	108,450	156,950
Cooperage	4	2,400	10	.....	.....	5,080	2,100	11,300
Dentistry, mechanical	14	14,050	7	.....	1	3,070	7,260	40,530
Drugs and chemicals (see also Patent medicines and compounds)	5	13,050	9	.....	.....	3,800	16,500	35,300
Dyeing and cleaning	3	1,650	1	1	.....	550	750	3,050
Flouring- and grist-mill products	7	143,500	40	.....	.....	17,404	401,048	540,927
Foundery and machine-shop products	9	104,650	213	.....	.....	119,750	239,700	410,500
Furniture (see also Upholstering)	13	75,050	54	.....	.....	30,000	60,775	122,150
Furs, dressed	5	120,600	27	50	2	36,810	163,550	344,000
Housefurnishing goods	5	108,000	44	25	1	35,740	321,407	510,270
Liquors, malt	11	371,500	95	4	2	38,960	107,542	208,972
Lithographing (see also Printing and publishing)	3	14,000	14	1	1	9,785	19,657	37,525
Lock- and gun-smithing	4	4,400	7	.....	.....	3,750	3,850	13,500
Looking-glass and picture frames	3	11,750	3	.....	.....	1,400	13,000	19,200
Lumber, planed	4	48,000	44	.....	.....	24,150	80,000	128,500
Malt	4	30,500	18	.....	.....	9,485	40,300	74,000
Marble and stone work	12	37,500	67	.....	.....	30,100	32,555	90,975
Masonry, brick and stone	58	126,420	780	.....	.....	271,087	274,150	642,608
Millinery and lace goods	3	13,500	.....	34	.....	9,500	33,000	60,500
Mineral and soda waters	3	7,000	12	.....	.....	4,436	7,500	22,000
Painting and paperhanging	24	20,650	84	.....	.....	37,620	67,210	147,500
Patent medicines and compounds (see also Drugs and chemicals)	5	14,900	6	5	2	3,038	6,000	24,000
Photographing	9	14,625	13	2	.....	6,150	4,040	28,200
Plumbing and gasfitting	9	33,350	47	.....	.....	23,331	67,800	115,850
Printing and publishing (see also Lithographing)	10	502,000	261	13	82	222,384	146,959	527,764
Saddlery and harness	11	31,193	54	.....	2	28,783	83,760	147,191
Shirts	4	4,700	4	32	.....	10,800	4,700	22,500
Slaughtering and meat-packing, not including retail butchering	5	165,000	31	.....	2	17,100	371,050	429,747
Tinware, copperware, and sheet-iron ware	20	90,356	62	.....	4	36,820	91,464	165,593
Tobacco, cigars and cigarettes	27	79,212	116	2	32	84,778	147,600	388,674
Upholstering (see also Furniture)	4	2,150	5	.....	.....	1,600	3,350	9,500
Watch and clock repairing	14	13,000	22	.....	.....	13,970	5,150	36,700
Wheelwrighting (see also Blacksmithing; Carriages and wagons)	15	43,750	47	.....	.....	23,010	28,000	71,400
All other industries (a)	48	414,400	298	288	24	223,258	473,131	867,461

a Embracing agricultural implements; baking and yeast powders; boot and shoe uppers; boxes, fancy and paper; brass castings; buttons; coffins, burial cases, and undertakers' goods; corsets; cutlery and edge tools; drain and sewer pipe; engraving and die-sinking; engraving, wood; explosives and fireworks; furnishing goods, men's; hairwork; hats and caps; instruments, professional and scientific; iron work, architectural and ornamental; ivory and bone work; kindling wood; liquors, distilled; lumber, sawed; models and patterns; musical instruments and materials (not specified); musical instruments, organs and materials; pumps; regalia and society banners and emblems; safes, doors, and vaults, fire-proof; sash, doors, and blinds; scales and balances; show-cases; soap and candles; steam fittings and heating apparatus; stereotyping and electrotyping; trunks and valises; type founding; vinegar; wirework; and wood, turned and carved.

From the foregoing table it appears that the average capital of all establishments is $6,304 87; that the average wages of all hands employed is $431 04 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is $13,824 17.

WINONA,

WINONA COUNTY, MINNESOTA.

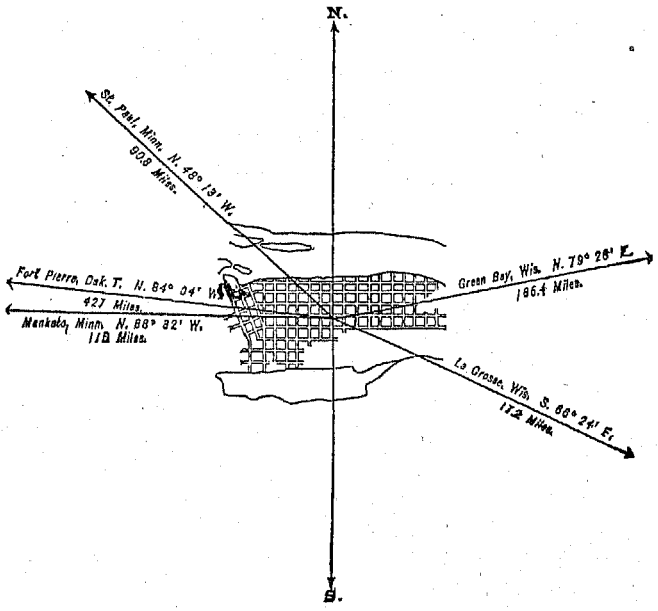
POPULATION

IN THE

AGGREGATE,

1860-1880.

	Inhab.
1790	
1800	
1810	
1820	
1830	
1840	
1850	
1860	2,464
1870	7,192
1880	10,208



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	5,083
Female	5,125
Native	6,742
Foreign-born	3,466
White	10,139
Colored	*69

*Including 4 Chinese.

Latitude: 44° 4′ North; Longitude: 91° 42′ (west from Greenwich); **Altitude: 616 feet.**

FINANCIAL CONDITION:

Total Valuation: $3,780,698; per capita: $370 00. Net Indebtedness: $183,000; per capita: $17 93. Tax per $100: $1 50.

HISTORICAL SKETCH.

The first white settler came to Winona in 1851. In June, 1852, the original plat of the city was surveyed. By 1853 a population of 60 had gathered together, and, two years later, when the public lands were first offered for sale, the number rose to 800. In 1857 the city government was organized. A great fire swept away a large part of the city on the 4th of July, 1861. At that time the buildings were nearly all of wood, there being only two of brick on the town site; since then their character has greatly improved, both in point of material and in style of architecture, brick or stone having been used for all business blocks, churches, houses, and principal public buildings. In the early years of the town the settlers came mostly from New England and the middle states, and the American element still predominates, although many emigrants have come here from Germany, Scandinavia, Ireland, Poland, Bohemia, etc.

WINONA IN 1880.

The following statistical accounts have been compiled from very full reports furnished the Census Office by Messrs. William P. Phelps, secretary of the Winona board of trade, and L. F. von Wimpffen, city and county engineer:

LOCATION.

Winona is situated on the west bank of the Mississippi river, about 100 miles below the head of navigation, and 700 miles above its junction with the Missouri. The river here has a depth of water of from 12 to 20 feet in the channel, which is 1,000 feet wide, and has a current of from 3 to 3.5 miles per hour. By means of this river, water communication is open with Saint Paul on the north, and La Crosse, Dubuque, Davenport, Keokuk, Saint Louis, Memphis, New Orleans, and all ports on the Ohio and Missouri, on the south.

RAILROAD COMMUNICATIONS.

Winona is a center of three railway lines. The Chicago and Northwestern and the Chicago, Milwaukee, and Saint Paul systems intersect at this point. Winona is also the present western terminus of the Green Bay and Minnesota railway. The Winona and Saint Peter division of the Chicago and Northwestern is completed westward from Winona to the Missouri river at Fort Pierre. Through the Chicago, Milwaukee, and Saint Paul railway the city has direct connection with the Northern Pacific system, and with the great lines of the West and North. Winona is connected with the great lakes at four different points.

TRIBUTARY COUNTRY.

Winona is located on the eastern margin of the remarkable wheat belt that extends through Minnesota and Dakota, for a great part of which it is the base of supplies. The agricultural region immediately surrounding the city is composed of rich valleys skirting the small streams emptying into the Mississippi, and of prairie land terminated by the bluffs which line the great basin of the river. The chief productions of this region are wheat, rye, oats, barley, Indian corn, flax, potatoes, and turnips, all of which grow in great profusion. Grapes, especially the Delaware and other hardy varieties, are produced in considerable quantities, and the cultivation of amber sugar-cane is receiving much attention. The immense lumber districts of the Chippewa river and other streams are more or less tributary to the city.

TOPOGRAPHY.

The city is built upon an ancient river-bed, which makes a terrace, the highest point of which has an elevation of about 25 feet above the low-water mark of the Mississippi. The soil is composed of gravel, sand, and loam. The range of bluffs bordering this terrace rises abruptly to a height varying from 450 to 595 feet. The rocks in them are the Potsdam sandstone and the Upper Magnesian limestone. The distance from bluff to bluff across the river varies from 5 to 7 miles. The natural boundaries of the city are: on the south, the lake of Winona and the bluffs mentioned, rising almost directly from the shores of the lake; on the north, the Mississippi; on the east, swamp and meadow land; on the west, swamp and meadow land and sandy prairie. The city limits inclose an area of about 3,233 acres. The natural drainage is good, running partly to the lake and partly to the Mississippi, with an inclination of not less than 9 inches in 300 feet. The country for a radius of 5 miles is considerably wooded, especially on the bluffs and in the valleys. The soil is like that of the city, except that on the prairie it is a rich clayey loam.

CLIMATE.

Highest recorded summer temperature, 100°; highest in average years, 95°; lowest recorded winter temperature, —40°; lowest in average years, —25°; average summer temperature (according to Smithsonian Institution charts), 67.5°; average winter temperature, 16.5°. The current of the Mississippi being rapid, no deleterious influence on the climate has been noticed; through its broad, deep basin cooling winds have a free passage. There are not marshes enough in the vicinity to affect seriously the sanitary condition of the city. The south winds descending in summer from the high bluffs have a considerable influence in mitigating the summer heat; the west winds are very cold in winter, and at all times lower the temperature; these are the prevailing winds. Occasionally in the winter east winds coming from the great lakes are very chilly; they usually bring snow.

STREETS.

Total length of streets, a little over 49.5 miles, of which 1 mile is paved with broken stone. Though 30 miles are reported paved with gravel, it is practically a natural roadway made through gravel, as the soil is a gravelly loam; hence the cost is merely nominal. The sidewalks are of stone on the principal business streets and of plank on the rest. In a few cases the gutters are of stone, but generally are ditches at the roadside. Tree-planting has been very general along the margin of the sidewalks. The repair of streets is done by day work, under the

WINONA,
MINN.
WINONA LAKE
MISSISSIPPI RIVER
SCALE OF FEET

direction of the street commissioner, the annual cost being from $2,000 to $2,500. In the past year $8,087 02 was expended on roads and streets (including construction and repair of sidewalks), and $1,471 75 on State roads and bridges. There is a preference for day work, but no experience has been had with contract work. There are 2 wooden bridges within the city limits, with a total length of 563 feet. The city expended $3,272 in the past year for the maintenance of the ferry across the Mississippi, and received $3,217 68. No horse-railroads have yet been constructed, but a charter has been granted for one, and work is to be begun shortly.

WATER-WORKS.

The total cost of the water-works up to the present time has been $40,000. The Holly system of direct pumping is used, and a pressure of from 50 to 80 pounds is maintained. Between 500,000 and 1,500,000 gallons per day are pumped. The yearly cost of maintenance, aside from the cost of pumping, is reported to be $526 75. The annual income report of the finance committee of the city council shows that for the past year the income from water-rents was $1,632 61; the expenditure on the water-works, including operation, repairs, and 3,730 feet extension, were $12,822 95. Previous to February 10, 1880, 42,510 feet of water-pipe had been laid, as follows: Six-inch pipe, 24,650 feet; 7-inch, 12,480; 8-inch, 5,380. The steam-power of two mills is used for pumping.

GAS.

The gas-works are not owned by the city. The annual consumption of gas is 700,000 cubic feet; in 1879, to produce this, 678 tons of coal were used. The charge per 1,000 feet is $3 50. The city pays $25 per month for each street-lamp using gas, and there are 77 such, and 27 that burn oil. The gas company has laid 44,194 feet of pipe.

PUBLIC BUILDINGS.

There is a "city building" used wholly for municipal purposes, which cost $10,000. The county court-house cost about $7,500.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are 3 public parks, containing 90,000 square feet, and occupying one square each. They are laid out in irregular plats and ornamented with evergreens and other trees. Two of them were given to the city; the third cost $6,000. The improvements have mostly been made by private effort, there having been no public expenditures on them.

PLACES OF AMUSEMENT.

There are 2 halls adapted to theatrical purposes—Philharmonic hall, seating from 600 to 700, and Ely hall, seating from 400 to 500; both these halls are sometimes used for concerts and lectures, but not often. In the year ending March 31, 1881, $228 was received for license for "shows", as the report of the finance committee puts it. The Normal hall, in the third story of the state normal-school building, seats 1,000, is well lighted, heated, and ventilated, and is very popular for public purposes. There are no concert- or beer-gardens within the city limits; several have been started from time to time, but none have been successful.

DRAINAGE.

There is no system of sewerage in the city.

CEMETERIES.

The city has 2 cemeteries, one Protestant, known as *Woodlawn*, and one Roman Catholic. Woodlawn cemetery embraces 40 acres, and is about 1½ mile from the city, due south on the opposite side of lake Winona. It lies in a valley formed by two bluffs, 596 feet high, their summits being about 800 feet apart. In the inclosure there are 3 comparatively level plateaus. The more abrupt ground is made available by terracing. The soil is clayey. Graves are dug 4 feet deep for children and 5 feet for adults. Lots are sold at 25 cents per square foot. The revenue amounts to $150 per year. The total number of interments up to December 31, 1880, was 2,068.

MARKETS.

There are no public or corporation markets in the city. No hucksters' wagons are accustomed to stand in the streets, except those containing wood and hay, and these are confined to one street a hundred feet wide for a distance of a block (300 feet). Peddlers of any thing except wood, hay, and agricultural produce have to obtain a license and pay $10 per month for it.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief health organization of the city is the board of health, consisting of 5 aldermen, one from each ward, appointed by the mayor. A city physician annually elected by the city council attends the meetings of this board, and is its chief executive officer. The expenses of the board itself are merely nominal; the members receive no

pay, but the city physician receives $300 per year. The board can order, and enforce through the police, the abatement of nuisances of all kinds; the members themselves have no police power. Inspections are made regularly, and on reports of nuisances. The board meets weekly in summer. The burial of the dead within the corporate limits of the city is forbidden. Small-pox patients are isolated in the public pest-house, situated on the open prairie remote from the city. Scarlet-fever patients are merely isolated at home. The board may take cognizance of the breaking out of contagious diseases in schools, but no occasion has ever yet been presented for summary measures. It is one of the duties of the city physician to see that all persons, so far as possible, are properly vaccinated, especially those in the vicinity of any persons attacked by the small-pox. There is no registration of births; deaths are registered only so far as burials are registered by the superintendent of cemeteries. The board reports to the city council not oftener than once a year.

The report of the state board of health for 1878 says that Winona has never known an epidemic of diphtheria. The number of deaths from sporadic cases of this disease from January, 1870, to December, 1878, was 32, and the total of deaths from all causes, 1,367.

MUNICIPAL CLEANSING.

Street-cleaning.—Streets are cleaned both by the city and by private abutters, the city's work being done by its own force and entirely by hand. There is no regularity about the work, but it is reported that the streets are generally in good condition. The annual cost of the work to the city is about $1,500. Sweepings are deposited on low grounds at a distance from the city. The city ordinances provide that "the owner or owners, occupant or occupants, of any tenement or lot in this city shall keep or cause to be kept such tenement or lot, and so much of the streets and alleys adjacent thereto as lie between such tenements or lots and the center of such streets or alleys, free from all dirt, filth, rubbish, or any offensive or unwholesome substance or matter". If they fail of doing this the city marshal or any member of the board of health shall cause it to be done, and the expense shall be recovered from the delinquent party by a civil action before any justice of the peace in the city. The special defect of the whole system of street-cleaning is reported to be the lack of uniformity in the time and manner of doing the work.

Removal of garbage and ashes.—Garbage is removed wholly at the expense of householders. While awaiting removal it must be kept in suitable vessels. It is generally used to feed swine. Ashes are used on soil and for soap-making.

Dead animals.—Dead animals are hauled to a considerable distance, and allowed to decay on unoccupied ground.

Liquid household wastes.—Chamber-slops are deposited in privy-vaults. None of the liquid household waste of the city is delivered into public sewers; perhaps one-fourth of it goes into dry wells or cesspools, and these are very porous. Investigations indicate a gradual deterioration of the well-water of the city, but the use of water from the city water-works is increasing. The cleaning out of cesspools is done entirely according to private necessity. As the city is small, the defects of the system are not so noticeable as they will be shortly when the soil is more thoroughly saturated with filth. A thorough system of sewerage will soon be indispensable.

Human excreta.—Probably not more than a dozen houses have water-closets, nearly all depending upon ordinary privy-vaults; all water-closets deliver into cesspools. The only regulation as to the removal of human excreta is that it must be done between the hours of 11 p. m. and 4 a. m. The dry-earth system is not at all used.

Manufacturing waste.—It is reported that there are no deleterious manufacturing wastes from any establishment in the city.

POLICE.

The police force is appointed by the city council. Its chief executive officer is the city marshal, who receives a salary of $600 per year and fees. The rest of the force consists of a deputy marshal and 6 patrolmen, with salaries of $50 per month each. Their uniforms are navy blue in color, and each man furnishes his own. They serve 12 hours per day each, and patrol from 6 to 8 miles of streets in all. In 1880 there were 333 arrests, the principal causes being drunkenness and disorder. There were 150 tramps lodged in the station-house, against 300 in 1879. The police department co-operates with the fire department in times of fire to prevent theft, etc., and with the health department in seeing that nuisances are abated, streets cleaned, etc. Special policemen are appointed by the city marshal; their standing while on duty is the same as that of the regular officers. The expenditures on account of the police department for the year ending March 31, 1881, were $4,289 54.

FIRE DEPARTMENT.

The annual report of the chief engineer of the fire department shows that the apparatus in use consists of 1 second-class Silsby steam-engine, 4 hose-carts—3 two-wheeled and 1 four-wheeled—and 1 hook-and-ladder truck, with 3,700 feet of hose on hand. The fire department consists of 4 hose companies and 1 hook-and-ladder company, with a total number of 111 active firemen. The total number of fires last year was 18; of alarms, 23; total amount of property destroyed, $6,850, upon which insurance was paid to the amount of $5,150. The city has now 92 hydrants.

IOWA.

BURLINGTON,

DES MOINES COUNTY, IOWA.

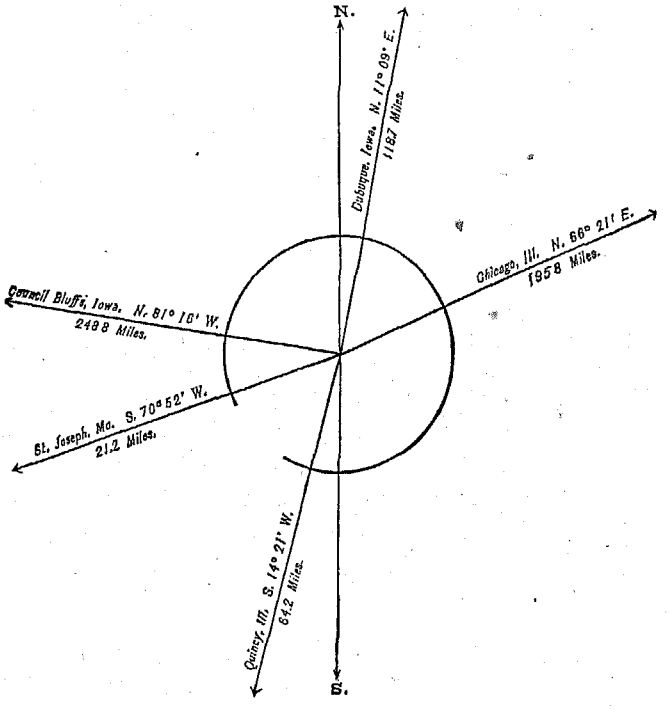
POPULATION

IN THE

AGGREGATE,

1850-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	4,082
1860	6,706
1870	14,930
1880	19,450



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	9,650
Female	9,800
Native	14,594
Foreign-born	4,856
White	19,038
Colored	412

Latitude: 40° 49′ North; Longitude: 91° 7′ (west from Greenwich); **Altitude: 600 feet.**

FINANCIAL CONDITION:

Total Valuation: $4,001,982; per capita: $206 00. **Net Indebtedness: $128,061; per capita: $6 58.** **Tax per $100: $5 12.**

HISTORICAL SKETCH.

In 1836, Wisconsin territory was organized, and Iowa made a district of it, with the seat of government for the whole territory fixed at Burlington. In 1838 Iowa territory was organized, and in 1839 the capital of the territory was removed from Burlington to Iowa City. In 1846 the territory became a state.

A few Frenchmen had settled at Montrose and Dubuque before the close of the last century, and some French pioneers and American hunters had long lived among the Indians, but the first settlements of whites permitted by the United States government within the present limits of Iowa were made in 1833-'34 at Fort Madison, Burlington, and Dubuque. Notwithstanding the removal of the seat of government, the growth of Burlington has been steady and healthy. It is the seat of Burlington university.

BURLINGTON IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Burlington:

LOCATION.

Burlington, Iowa, is situated on the west bank of the Mississippi river, 45 miles above Keokuk, 207 miles west southwest of Chicago, 250 miles by water above Saint Louis, and 296 miles by railroad east of Omaha, at an average altitude of 600 feet above the level of the sea. The river is here a broad, deep, and beautiful stream, and gives direct communication with Keokuk, Saint Louis, Cincinnati, New Orleans, Saint Paul, and all other points on the great rivers.

RAILROAD COMMUNICATIONS.

The main line of the Chicago, Burlington, and Quincy railroad runs through Burlington from Chicago to Council Bluffs and Omaha, giving Burlington connections with these places and with Saint Joseph, Kansas City, and Indianola, the most western point yet reached by this road; the Carthage branch of this line connects Burlington with Quincy. The Toledo, Peoria, and Burlington short line of the Wabash, Saint Louis, and Pacific railroad connects Burlington with all the places named in the titles, as well as with Ottumwa and Van Wort to the west, Keokuk and Warsaw to the south, and Chicago. The Burlington, Cedar Rapids, and Northern connects at Albert Lea with the Minneapolis and Saint Louis, thus giving Burlington a direct line to the North and Northwest. The Burlington and Southwestern connects at Laclede with the Hannibal and Saint Joseph, and the Burlington and Northwestern connects at Washington, Iowa, with the Chicago, Rock Island, and Pacific.

TRIBUTARY COUNTRY.

Burlington is the capital of Des Moines county, and is naturally its center of business. The surface of this county is agreeably diversified, and is divided between prairies and woodlands in convenient proportions; the soil is excellent, and is extensively cultivated. The Mississippi forms its boundary on the east and southeast; it is drained also by Flint creek. Cattle, grain, wool, hay, and dairy products are extensively raised. Of manufactories those of wagons are most numerous. Coal and limestone are abundant.

TOPOGRAPHY.

The city is regularly laid out, and is partly situated on the high bluffs which border the valley. Like all the cities along the Mississippi, it lies mainly along the terrace between the present bed of the river and the bluffs. Burlington limestone, a variety of sub-carboniferous magnesian limestone, derives its name from the city, the typical locality where it was first studied. It is a valuable building stone, and is peculiarly interesting to naturalists. The upper bed is of a light gray color, and is nearly pure carbonate of lime. The lower bed contains more magnesia.

CLIMATE.

The temperature tables published by the Smithsonian Institution show that the mean annual temperature of Burlington is 51.28°; the average winter temperature is 26.93°.

STREETS.

Total length of streets, 100 miles; 9.5 miles have been paved with broken stone (macadam), which is the only paving used, at a cost of about $2 50 per square yard. Plank, brick, stone, and composition are the principal materials used for sidewalks. Trees are planted along most of the streets, except the business thoroughfares. The construction of streets is done by contract work, the repairs by day work. The annual expenditures of the street department amount to about $10,000. There are 9 miles of horse-railroad tracks. The total number of cars is 19; of horses, 100; of men employed, 35. The rate of fare is 5 cents.

WATER-WORKS.

The works for water-supply cost $230,000. The Holly system of direct pumping is used; a pressure of 90 pounds is maintained under ordinary circumstances, which is increased to 175 in cases of fire. The greatest amount pumped per day is 1,600,000 gallons; the least, 550,000. The yearly cost of maintenance, aside from cost of pumping, is $300, (?) and the yearly income from water-rates is $12,000. Water-meters are used, and it is reported that they save at least 50 per cent. of waste, and bring the price of water to an average of 18 cents per 1,000 gallons. The mayor's message to the city council for the year ending March 17, 1879, said in regard to the water-works:

"The city practically owns the works, and the company operates them. The city is interested in the receipts of the water company in precisely the same way as though it absolutely owned and controlled the works. After the payment of the 12 per cent. interest upon the amount of money actually invested by the stockholders, all profit will go toward liquidating the corporate indebtedness."

GAS.

The gas-works are not owned by the city. The daily average production is about 35,000 feet, and the charge per 1,000 feet is $3 50.

PUBLIC BUILDINGS.

The city uses one building wholly for municipal purposes. Its cost was $15,762.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There is one park, given to the city by the United States government. Its yearly cost of maintenance is $100.

PLACES OF AMUSEMENT.

The city has 2 theaters, viz: The Opera House, with a seating capacity of 1,800, and Grimes' opera-house, with a seating capacity of 1,500. A license of $5 must be paid for each theatrical performance. There are 3 halls used for concerts, lectures, dances, etc., viz: Mozart hall, seating 1,200; Turner hall, seating 800; and Marion hall. There are 2 beer-gardens patronized by the German population, but used only on Sundays and legal holidays.

DRAINAGE.

No report on this subject was received from the city authorities.

CEMETERIES.

There are 4 cemeteries connected with the city, viz:

Aspen Grove Cemetery, containing 53 acres, being 2 miles from the center of the city, in the northwest corner of the town.

Catholic Cemetery, 2½ acres, 1 mile northeast of the center.

Hebrew Cemetery, 1 acre, 2 miles west of the center.

Cemetery of the Bleeding Heart of Mary and Jesus, 15 acres, south of the town.

Up to December 23, 1881, there had been 289 interments in Aspen Grove, 35 in the Catholic cemetery, 3 in the Hebrew cemetery, and 37 in the Cemetery of the Bleeding Heart of Mary and Jesus. There has been no attempt at landscape-gardening in Aspen Grove, but personal taste is unrestricted as to the improvement and decoration of lots.

MARKETS.

The market building has been converted into offices for the city officials, and a council-chamber. The street around the square in which it is situated is occupied by wagons of farmers and hucksters, who pay from $3 to $4 per season for a space 6 feet wide. The revenue from this source for the year ending April 1, 1879, was $246 75. Business is done between 4 and 8 a. m. on Tuesdays, Thursdays, and Saturdays. The city ordinances provide that no person shall be allowed to sell fresh meats or fish at retail without first obtaining a written permit therefor from the city council. A market-master is annually elected by the city council, but, now that the market building has been closed, his duties are light. He reports the receipts from the city scales (of which he has charge) for the year ending April 1, 1879, to have been $951.

SANITARY AUTHORITY—BOARD OF HEALTH.

The following sections of chapter 151 of the acts of the 18th general assembly of the state of Iowa are now in force, and are given in full as applying to all the cities and towns of the state:

The mayor and aldermen of each incorporated city, the mayor and council of any incorporated town or village in the state, or the trustees of any township, shall have and exercise all the powers and perform all the duties of a board of health within the limits of the cities, towns, and townships of which they are officers.

Every local board of health shall appoint a competent physician to the board, who shall be the health officer within its jurisdiction, and shall hold his office during the pleasure of the board. The clerks of the townships and the clerks and recorders of cities and towns shall be clerks of the local boards. The local board shall also regulate all fees and charges of persons employed by them in the execution of the health laws and of their own regulations.

It shall be the duty of the health physician of every incorporated town, and also of the clerk of the local board of health in each city or incorporated town or village in the state, at least once a year to report to the state board of health their proceedings, and such other facts required, on blanks and in accordance with instructions received from said state board. They shall also make special reports whenever required to do so by the state board of health.

Local boards of health shall meet for the transaction of business on the first Monday of May and the first Monday in November of each year, and at any other time that the necessities of the health of their respective jurisdictions may demand; and the clerk of each board shall transmit his annual report to the secretary of the state board of health within two weeks after the November meeting. Said report shall embrace a history of any epidemic disease which may have prevailed within his district. The failure of the clerk of the board to prepare, or caused to be prepared, and forward such report, as above specified, shall be considered a misdemeanor, for which he shall be subject to a fine of not more than twenty-five dollars ($25).

It will be seen that the legislature has provided who shall constitute the local boards of health. They have only, therefore, to organize and adopt the necessary regulations concerning nuisances, sources of filth, causes of sickness, etc., and at once proceed to enforce them. The law provides ample penalties for violations, which penalties may be used to defray the expenses of the local board.

In Burlington no distinct account has been kept of the expense of sanitary measures. Except in the case of an epidemic many years ago, it has been merely nominal. Inasmuch as the city council is the board of health, its authority in regard to expenditures and all sanitary measures is limited only by the authority vested in the city council. The business of the board is transacted at regular meetings of the council. Its chief executive officer is the city marshal, and only through him does it exercise police powers. Inspections are made only as nuisances are reported, there being no regular system about it. In case of a nuisance reported, the board of health directs the marshal to notify the delinquent to abate, and, if not done, it is abated by the city at the expense of the owner of the property. As to defective house-drainage, privy-vaults, sources of drinking-water, defective sewerage, etc., the practice is the same, *i. e.*, to inspect only on complaint.

BURIAL OF THE DEAD.

No dead body is allowed to be buried without a permit issued by the clerk of the board (the city clerk).

INFECTIOUS DISEASES.

There has been but one case of small-pox for a number of years, and that was isolated by establishing quarantine with a police guard. Very little attention is publicly paid to scarlet fever unless it becomes prevalent, and no quarantine has yet been required. There is no public pest-house; one was established temporarily for small-pox in 1874. Vaccination is not compulsory, nor is it done at the public expense.

REPORTS.

The city ordinances provide that the board, through its clerk, shall keep a complete record of births and deaths within the city, but the record has never been complete. The city clerk writes that recent statutes, requiring reports to be made to the county clerk, have made it more difficult to secure reports under the city ordinances.

MUNICIPAL CLEANSING.

Street-cleaning.—The city ordinances provide that between April 1 and November 1 in every year abutters within the limits of the macadamized streets and paved alleys of the city shall, on every Saturday morning before 8 o'clock, sweep and clean from the curbing of the street or wall or alley to the center of street or alley, as the case may be, and put the dirt into convenient heaps for removal. Neglect to do this subjects the abutter to a fine. The street commissioner, with his teams and laborers, removes the dirt without expense to abutters, except in case of alleys. There is no separate account kept of the cost of the work to the city. There is no definite place for depositing the sweepings; they are used, wherever needed, to correct the grade of streets, and this is reported to be the only defect of the system, as sweepings are not suitable for street-making.

Removal of garbage and ashes.—Householders remove garbage and ashes. There are no regulations on the subject except the general ordinances about nuisances. It is reported that only the general habits of cleanliness of the people prevent serious results from the lack of system.

Dead animals.—The removal of dead animals is in charge of the city marshal. The annual cost of this service is $200.

Liquid household wastes.—Laundry waste and kitchen-slops are usually drained into surface gutters or sinks; chamber-slops into privy-vaults. Very little of the liquid household waste of the city is delivered into public sewers, that from 2 hotels being all that is known certainly so to drain; probably 80 per cent. of it is run into the street-gutters, and nearly all the rest into dry wells or cesspools on the premises. Street-gutters are not flushed except when it is incidentally done by the water company in flushing their mains.

Human excreta.—Not more than 15 per cent. of the houses of the city have water-closets, the remainder depending on privy-vaults. All water-closets deliver into public or private sewers. The ordinances provide that privy-vaults must be at least 10 feet deep and sufficiently walled up, and that every person owning a privy-vault must deposit in the vault 10 pounds of copperas in July, August, and September each. The dry-earth system is not at all used. Night-soil is deposited in the channel of the Mississippi river below the city.

Manufacturing waste.—There are no regulations on this head. Surface drains are relied upon to remove liquid waste of this sort.

POLICE.

The police force is appointed by the mayor and confirmed by the city council. The mayor has exclusive charge and control of the force, and governs it through a chief of police. The chief receives $800 per year, and there are 9 patrolmen receiving $50 per month each. The men furnish their own uniforms. They serve 12 hours per day each, and patrol in all about 6 miles of streets. In the year ending March 31, 1881, there were 809 arrests, of which 296 were for intoxication, 156 for misdemeanor, 80 for disturbing the peace, 60 for assault and battery, 44 for vagrancy, and the rest for minor offenses. The mayor may appoint special policemen, "who shall be authorized to make arrests when called upon, or when crime has been committed in their sight". They have the same standing and pay while on duty as the regular force. The cost of the police for 1880 was $7,655 50.

FIRE DEPARTMENT.

On March 1, 1879, the fire department consisted of 18 men, including the chief and assistant engineers, 8 of whom were station-men regularly employed, and 8 minute-men. The apparatus consisted of 4 hose-carriages and 1 hook-and-ladder truck, with 5 horses. The actual running expenses for the previous year was $6,863 22. The telephone fire-alarm was used; the department was called out 65 times during the year. The total loss from fire was $29,845 50, on which there was insurance to the amount of $28,908 50.

CEDAR RAPIDS,

LINN COUNTY, IOWA.

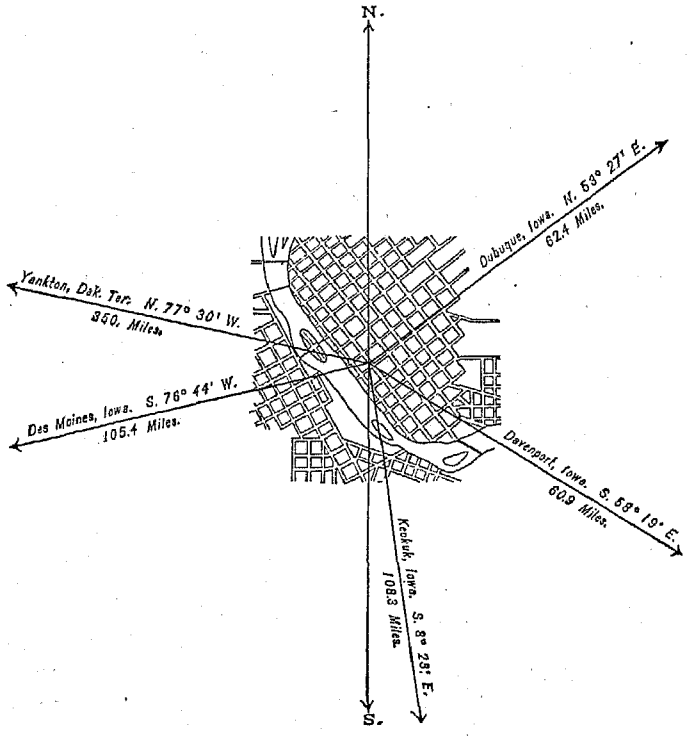
POPULATION

IN THE

AGGREGATE,

1860-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	.....
1860	1,830
1870	5,940
1880	10,104



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	5,128
Female	4,976
Native	7,854
Foreign-born	2,250
White	9,93[illegible]
Colored	*166

* Including 3 Chinese.

Latitude: 41° 58′ North; Longitude: 91° 31′ (west from Greenwich).

FINANCIAL CONDITION:

Total Valuation: $1,674,250; per capita: $166 00. Net Indebtedness: $40,867; per capita: $4 04. Tax per $100: $3 73.

CEDAR RAPIDS IN 1880.

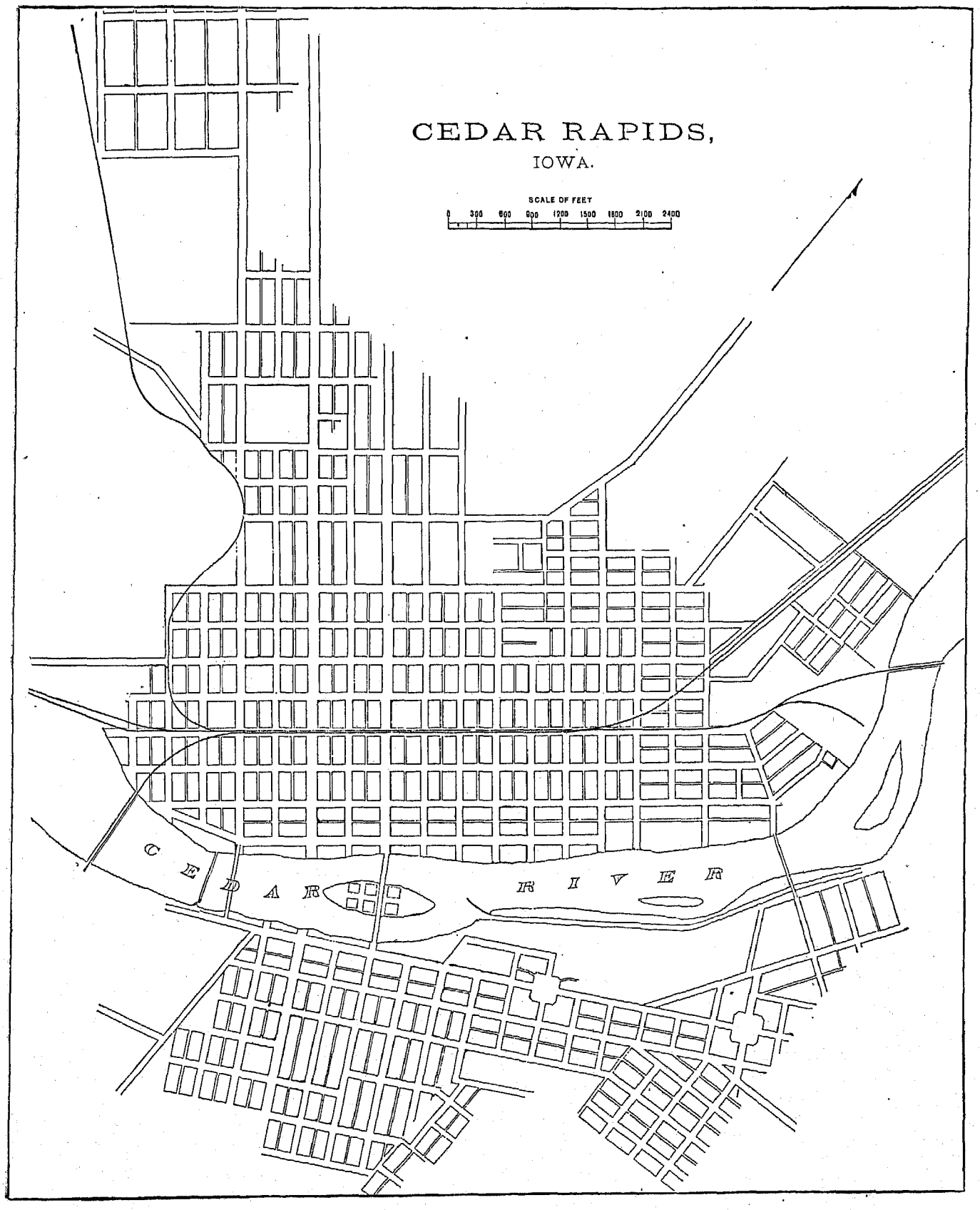
The following statistical accounts, collected by the Census Office, indicate the present condition of Cedar Rapids:

LOCATION.

Cedar Rapids is situated in Linn county, Iowa, on the Cedar (or Red Cedar) river, 219 miles west of Chicago, 265 miles south of Saint Paul, and about 60 miles west-southwest of Dubuque.

RAILROAD COMMUNICATIONS.

The Burlington, Cedar Rapids, and Northern railway runs from Burlington through Cedar Rapids to Albert Lea, where it connects with the Minneapolis and Saint Louis railroad for the North and Northwest. The Council Bluffs, Denver, and California line of the Chicago and Northwestern railroad passes through Cedar Rapids, connecting


CEDAR RAPIDS,
IOWA.
SCALE OF FEET
0 300 600 900 1200 1500 1800 2100 2400
CEDAR
RIVER

it with Chicago and Council Bluffs. The Cedar Rapids line of the Chicago, Milwaukee, and Saint Pau connects at Sabula, giving an almost straight road to Chicago; the Dubuque branch of the same road gives a line to Dubuque via Monticello.

TRIBUTARY COUNTRY.

The character of Linn county, in which Cedar Rapids is situated, may be taken to illustrate the country tributary to the city. This county is intersected by Cedar and Wapsipinicon rivers, which flow in a southeasterly direction, affording abundant water-power. It is also drained by two creeks. The surface is agreeably diversified, and is said to be well timbered. The soil is excellent and the water good. The wholesale trade of the city with this and the surrounding country is important.

TOPOGRAPHY.

Devonian and magnesian limestone are abundant along the banks of the Cedar river, and, no doubt, occur at Cedar Rapids. The river here furnishes a good water-power.

CLIMATE.

From the temperature charts published by the Smithsonian Institution it appears that the mean summer temperature of Cedar Rapids is about 70.5°, and the mean winter temperature about 21°.

STREETS.

The construction and repair of streets is done by day work at an annual cost of $4,000. Wood, stone, and brick are all used in the construction of sidewalks. There is a street railroad with 5 miles of track and 6 cars, the motive power being furnished by a steam motor; the rate of fare within the limits of the corporation is 5 cents.

WATER-WORKS.

The water-works are owned by a private corporation, and their first cost was $119,245. The supply is taken from Cedar river and pumped directly into the mains, the pressure on the pumps being 60 pounds to the square inch. The average daily consumption is estimated at 600,000 gallons. There are 7½ miles of mains and 330 water-takers.

GAS.

The gas-works are owned by a private corporation. The charge per 1,000 feet is $4. The city pays $30 for each street-lamp, 147 in number.

PUBLIC BUILDINGS.

The city owns a city hall and a city jail. Their total cost was $15,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There is 1 park, situated in the central part of the city, 300 feet square. It was given to the city. A committee of the city council controls it, and $100 is annually spent in its maintenance.

PLACES OF AMUSEMENT.

The theater of the city is Greene's opera-house, which has a seating capacity of 2,000. It pays an annual license of $75. There are no concert- or beer-gardens.

DRAINAGE.

Sewerage-works are constructed according to the requirements of each case as it comes up. There is no comprehensive plan. The outfall of sewage is to the Cedar river. Mouths of sewers are open and exposed, except at high water, when they are submerged. It is reported that there are no deposits in sewers requiring artificial flushing or removal by hand. The work of constructing sewers is done by the day under the direction of the city. One-half the cost is paid by the city. The other half is levied upon abutting property. Assessments are paid on the basis of frontage.

CEMETERIES.

There are 3 cemeteries connected with Cedar Rapids, viz:
Oak Hill, ½ mile east of the city limits, comprising about 80 acres.
A cemetery 1 mile south of the city, 20 acres.
Catholic Cemetery, 2½ miles southeast of the city, 10 acres.

MARKETS.

There are no public or corporation markets here.

SANITARY AUTHORITY—BOARD OF HEALTH.

As provided by the state law (quoted under "Burlington, Iowa", at page 709), the board of aldermen acts as a board of health. The annual expenses of the board are about $500. Inspections are made only as nuisances are reported. In such cases, if the nuisances exist, the city marshal serves written notices to owners or occupants to abate them. As the statutes provide, the board of health holds 2 regular meetings each year. Small-pox patients are isolated by a public quarantine of the house. Scarlet-fever patients are not isolated. There is no public pest-house. Vaccination is not compulsory. The board reports semi-annually to the state board of health.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned by the city's force by hand. Sweepings are generally deposited in the river.

Removal of garbage and ashes.—Garbage is removed by householders. Garbage and ashes are allowed to be kept in the same vessel.

Liquid household wastes.—No information was furnished on this head.

Human excreta.—Probably not more than 10 per cent. of the houses have water-closets.

Manufacturing wastes.—Manufacturing wastes are dumped into the Cedar river, which soon disposes of it, as the current here is about 5 miles per hour.

POLICE.

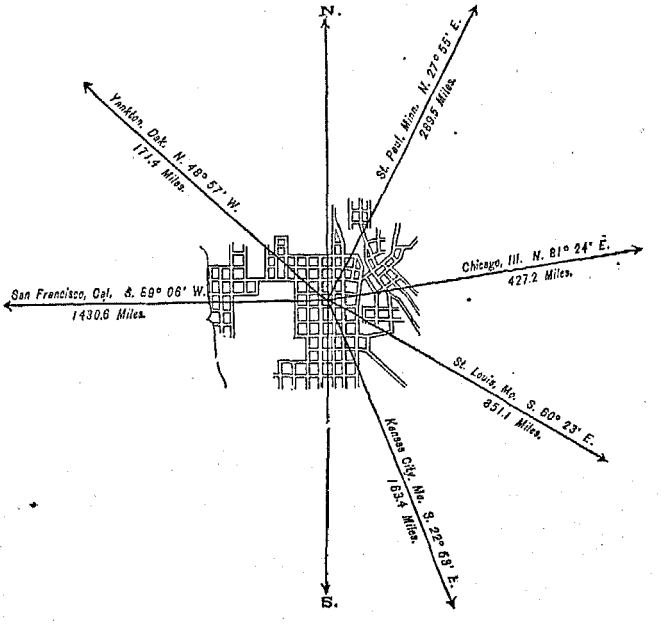
The police force is appointed by the mayor and confirmed by the city council; it is governed by the mayor and the city marshal. The city marshal is elected by the people, and receives a salary of $60 per month; the deputy marshal receives $50 per month, and 6 patrolmen are paid $40 per month each. Their uniforms are of blue cloth with brass buttons, and each man furnishes his own. They serve 12 hours per day each, and patrol from 3 to 5 miles of streets in all. In 1880 there were 385 arrests, the principal causes being drunkenness and disturbance of the peace. There were 200 station-house lodgers in 1880, against 300 in 1879. Free meals were given at a cost to the city of 12½ cents per meal. Special policemen are appointed by the mayor; their standing while on duty is the same as that of the regular force. The cost of the police force in 1880 was $3,450 58.

COUNCIL BLUFFS,

POTTAWATTAMIE COUNTY, IOWA.

POPULATION IN THE AGGREGATE, 1860-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	.....
1860	2,011
1870	10,020
1880	18,063



POPULATION BY SEX, NATIVITY, AND RACE, AT CENSUS OF 1880.

Male	10,191
Female	7,872
Native	14,496
Foreign-born	3,567
White	17,51[illegible]
Colored	*552

* Including 3 Chinese and 2 Indians.

Latitude: 41° 16′ North; Longitude: 95° 51′ (west from Greenwich); **Altitude: 1,000 feet.**

FINANCIAL CONDITION:

Total Valuation: $2,606,400; per capita: $144 00. Net Indebtedness, $138,400; per capita: $7 66. Tax per $100: $3 30.

HISTORICAL SKETCH.

Council Bluffs derived its name from a council held here on the bluffs with the Indians by Lewis and Clark in 1804. No settlement, however, was made until the fall of 1845, when a party of Mormons, composed mostly of English emigrants on their journey westward, started a village on the bluffs. The next year others came, and the little place slowly grew. In 1852–'53 part of these Mormons left for the West, but their places were quickly filled by settlers mostly from Missouri, Illinois, and Indiana. On January 19, 1853, an act was passed by the general assembly of Iowa to change the name of the town, theretofore called Kanesville, to Council Bluffs, and on the 24th of the same month an act was passed incorporating it as a city; in the following April the first city government was elected. In 1857 and 1864 the city suffered from periods of depression, but since the close of the war its growth in wealth and population has been steady and rapid. The only great fire from which it has suffered took place in the winter of 1854–'55, when the upper part of the city was almost entirely destroyed.

COUNCIL BLUFFS IN 1880.

The information concerning the condition of Council Bluffs in 1880, contained in the statistical accounts given below, was secured by the Census Office mainly through the mayor of the city, Hon. W. R. Vaughan:

LOCATION.

Council Bluffs is situated on the east side of the Missouri river, opposite Omaha, about 412 miles above Saint Louis and 135 miles west of Des Moines, at an average altitude of 1,000 feet above the surface of the sea. The Missouri is navigable, and gives water communication with all river ports on the Missouri, Mississippi, and Ohio rivers.

RAILROAD COMMUNICATIONS.

The city has become a great railroad center, mainly from the fact that it is practically the eastern terminus of the Union Pacific, the pioneer line across the Rocky mountains, which gives the East connection with San Francisco over the Central Pacific from Ogden. At Council Bluffs center 5 other roads, which connect with the Union Pacific at the Union depot, viz:

The Chicago, Rock Island, and Pacific runs to Chicago via Rock Island.

The Chicago, Burlington, and Quincy runs to Chicago via Burlington.

The Council Bluffs, Denver, and California line of the Chicago and Northwestern runs to Chicago via Cedar Rapids.

The Saint Louis and Omaha line of the Wabash, Saint Louis, and Pacific runs to Saint Louis, connecting at Moberly with the main line for Toledo via Hannibal and Wabash.

The Kansas City, Saint Joseph, and Council Bluffs runs to Kansas City via Saint Joseph.

TRIBUTARY COUNTRY.

The city has a large wholesale trade, and is the outlet for the vast grain region of Pottawattamie county, of which it is the capital. This county contains 700 square miles, is diversified with fine scenery, and presents a fair proportion of timber and prairie. The soil is fertile, adapted to grain and grass. It is well populated and has large commercial interests.

TOPOGRAPHY.

The city is built principally upon a plain at the base of the high bluffs from which it derives part of its name, although not a few of the finest residences are to be found in the numerous "glens" which intersect the bluff in every direction. The soil is of light yellow clay, which is very fine but packs hard. The bluffs are generally covered with a layer of black earth, the balance of the bluff being the bright yellow clay. There is no rock immediately underlying the surface. There are several lakes in the vicinity.

CLIMATE.

From the Smithsonian publications it appears that the mean summer temperature is 75.48°, the mean winter temperature 22.06°, and the mean annual temperature 49.96°.

STREETS.

The cost of keeping the paving of the city in repair is about $6,000 per year. Some of the sidewalks are of brick with stone or oak curbing, and the rest are of pine plank laid on oak stringers, varying from 4 to 15 feet in width. Trees are sometimes planted inside and sometimes outside the curbing. The repair of streets is done partly by contract work and partly by day work, at a total annual expense of from $10,000 to $12,000. The gutters are wholly of earth. The preference of the city authorities is for contract work for large jobs, and day work for general repairs. There is a horse-railroad with 0.5 mile of track, 3 cars, and 16 horses, employing 7 men; 57,400 passengers were carried during the year; the rate of fare is 15 cents. There is a herdic line with 14 coaches and 30 horses, employing 20 men, the fare being 5 cents.

WATER-WORKS.

Water-works are now in process of construction by the Council Bluffs City Water Works company, and are expected to be completed and in operation by September 1, 1882. The source of supply is to be the Missouri river.

MISSOURI RIVER
COUNCIL BLUFFS,
IOWA.
MOSS ENG. CO., N. Y.

GAS.

The city has been lighted with gas for the past 10 years by a private company. The daily average production is 30,000 feet, and the charge per 1,000 feet is $4 50. The city pays $30 per year each for 175 street-lamps. There are about 15 miles of gas-mains.

PUBLIC BUILDINGS.

There is a city building owned by the city, which cost $10,000, and the city owns 2 engine-houses. The total cost of municipal buildings belonging to the city is given as $25,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The city has 4 parks, viz: *Spring Park*, in the western part of the city, with an area (including Spring lake) of 600 acres; *Carr Lake*, south of the city, 106 acres; *Fairmount Park*, in the center of the city, 90 acres; *Bayliss Park*, in the business portion of the city, 4 acres. All but Fairmount park were given to the city. The total cost is said to be $20,000, and the yearly cost of maintenance (including improvements) is $1,000. They are controlled by the park committee of the board of aldermen.

PLACES OF AMUSEMENT.

There are 5 halls used for theater purposes, concerts, and lectures, as follows: Dohaney's hall, seating 1,000; Bloom and Wilson's hall, 600. There are 8 or 10 smaller halls used for various purposes. Theaters pay an annual license of $100. There are 2 concert- and beer-gardens: Brock's garden, 4 acres in extent, which cost $1,000 and has seats for 800, and Hom's park, 1 acre, which cost $4,000 and has seats for 600. Both are well patronized at all times.

DRAINAGE.

No system of sewers has yet been adopted. There are now in the city about 600 linear feet of 3-foot circular brick sewer, and 1,000 linear feet of wooden sewers from 2 to 4 feet square. These empty into sloughs along the Mississippi.

CEMETERIES.

There are 3 cemeteries, viz:
Fairview Cemetery, containing 30 acres.
Walnut Cemetery, 15 acres.
Catholic Cemetery, 40 acres.
No record has been kept of interments, but the total is estimated at 7,000. The first two cemeteries belong to private corporations; the last, to a church. The price of lots ranges from $10 to $25.

MARKETS.

There are no public markets in the city, except a locality designated by the city council for standing-room for wagons loaded with hay and wood offered for sale. There are no market revenues except the weighmaster's fees, 10 per cent. of which goes to the city. There are 4 or 5 wholesale private markets for the sale of fish, game, vegetables, etc.

SANITARY AUTHORITY—BOARD OF HEALTH.

In accordance with the state law (*vide* "Burlington, Iowa", at page 709), the board of aldermen acts as a board of health. Their powers are, of course, identical with those given the city council by the city charter, and their duties are the usual ones of such a board, *i. e.*, to take all measures necessary for the good of the public health, and especially to abate nuisances and to prevent the spread of infectious diseases. Except in case of infection, inspectors and assistant health officers are not employed. Inspections are ordinarily made only as nuisances are reported, and if the nuisances really exist it is ordered that they shall be abated immediately. The health committee of the board is appointed by its presiding officer, the mayor. Small-pox patients are sent to the pest-house, which is situated about 3 miles from the city. Scarlet-fever patients are quarantined at home. At times when small-pox is prevalent, vaccination is compulsory, and is done at the public expense. The registration of births, diseases, and deaths is performed under the state law.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned by the city's own force. No further information on this head was received.

Removal of garbage and ashes.—Garbage is removed by private parties.

Dead animals.—Dead animals are generally removed by parties engaged in the manufacture of glue and fertilizer. In case they become nuisances, the owner of land on which they are found is obliged to bury them. About 200 animals of different kinds are annually removed.

Liquid household wastes.—The dry-wells and cesspools of the city are very porous. It is reported that there has been no complaint of the contamination of drinking-water from this source. None of the waste runs into street-gutters.

Human excreta.—The houses of the city depend entirely on privy-vaults.

POLICE.

The regular police force is appointed by the city council, and is governed by the mayor and council.

The executive officer is the chief of police; he receives a salary of $1,080 per year. There are 6 patrolmen, receiving $840 per year each. They wear the common blue uniform, which they themselves provide. They serve 10 hours per day each, and patrol 10 miles of streets in all. In 1880 there were 1,300 arrests, the principal causes being intoxication, disturbance of the peace, and violation of the city ordinances. The amount of property stolen during the year was $1,500, of which $1,200 was recovered; 500 free meals were given to station-house lodgers, at a cost of $100. The police force co-operates with the fire department to the extent of guarding property in case of fire, and with the health department in enforcing its orders. Special policemen are appointed by the mayor to serve on legal holidays, etc.; they are under the orders of the regular force. There was one casualty in the force in 1880, caused by the accidental discharge of a revolver. The cost of the force for 1880 was $5,400 53.

DAVENPORT,

SCOTT COUNTY, IOWA.

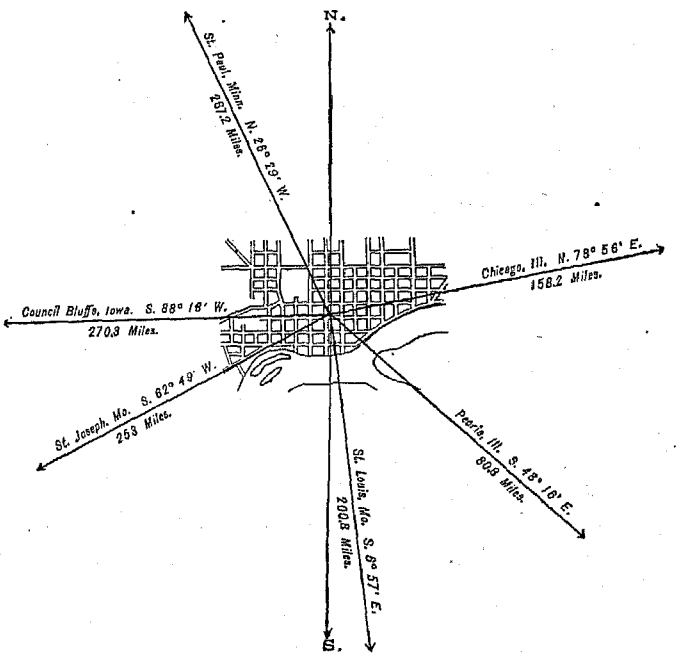
POPULATION

IN THE

AGGREGATE,

1850-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	1,848
1860	11,267
1870	20,038
1880	21,831



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	10,604
Female	11,227
Native	14,936
Foreign-born	6,895
White	21,600
Colored	231

Latitude: 41° 30′ North; Longitude: 90° 39′ (west from Greenwich); **Altitude: 534 to 714 feet.**

FINANCIAL CONDITION:

Total Valuation: $6,693,413; per capita: $307 00. Net Indebtedness: $290,675; per capita: $13 31. Tax per $100: $2 69.

HISTORICAL SKETCH.

The treaty with the Sac and Fox Indians in 1832 opened up a wide and fertile country for settlement, and in 1833 there were one or two claims made upon the lands now covered by the lower part of the present city of Davenport. In the fall of 1835 a company was formed to purchase and lay out a town site, and after due deliberation the land now included in the area bounded on the east by Harrison street, north by Seventh, west by Warren, and south by the river, was selected. The cost of the entire site was $2,000, divided into 8 shares of $250 each. The necessity of a town between the upper and lower rapids, the unexampled fertility of the surrounding country, the beauty of the location and its apparent freedom from malaria-breeding marshes, the facilities for good drainage, and the nearness of an immense water-power, had much to do with the choice of the company.

In the spring of the following year the site was surveyed and laid out, and in May the lots were offered for sale by auction, a steamboat coming up from Saint Louis laden with passengers to attend the sale. The sale, however,

was not a success, probably owing to the fact that the titles conveyed were simply such as were included in a squatter's claim, and only 50 or 60 lots were sold, the remaining lots being divided among the members of the company.

In 1836 Wisconsin was organized, and by an act of the legislature the "Black Hawk purchase" was divided into 2 districts, one of which included Davenport. In 1838 Iowa was set apart as a territory, and Scott county was formed with Davenport, incorporated as a town in 1839, finally settled on as the county-seat in 1840. The early growth of the town was slow; but when it is considered that at the time the site was purchased the whole country was staggering under the effects of the crisis of 1837, this is not to be wondered at. Though the pioneers of Wisconsin sent plenty of lumber down the broad bosom of the natural highway flowing past Davenport, provisions were high, and immigration, owing to the lack of transportation facilities, was slow.

The year 1850 began a new era, and the prospect of soon being connected with the eastern cities by rail gave an impetus to Davenport. In 1851 a city charter was obtained. In 1853 ground was broken for a railroad from this point westward to the Missouri river. In 1854 the first train came into Rock Island from Chicago, and the same year saw the corner-stone laid for a bridge over the Mississippi, connecting Davenport with Rock Island, Illinois. Immigration, which had begun a few years previously, increased, new industries sprang up, and business rapidly increased. From this time forward the progress of the city has been steady, with at times a growth that has been particularly marked.

Davenport has never suffered from any destructive conflagrations, and, with the exception of the financial crises of 1857 and 1873, from no marked periods of depression. The original population was native-born, with a few French; but since 1848 a large German element has been added, so that now the Germans, with their descendants, form a considerable portion of the inhabitants and have their own quarter of the city.

DAVENPORT IN 1880.

The following statistical accounts, much of which was furnished to the Census Office by Dr. R. J. Farquharson and E. H. Schmidt, esq., indicate the present condition of Davenport:

LOCATION.

Davenport lies in latitude 41° 30′ north, and longitude 90° 39′ west, from Greenwich, on the west bank of the Mississippi river, at the foot of the upper rapids, opposite the city of Rock Island, Illinois, and 330 miles by river above Saint Louis. The altitudes above sea-level are: lowest point, low-water mark on the government bridge, 534 feet; average level of the top of the curbstone in front of the United States signal office, 559 feet; and highest point, 714 feet. The river here is navigable for steamers drawing 3 feet of water at all times. The harbor capacity is unlimited. The channel in the Rock Island rapids, 3 miles above Davenport, has been improved so as to give a depth of 4 feet at low water and a width of 200 feet. The current here is from 1½ to 2 miles per hour, while in the rapids above it is sometimes 6 miles an hour. Davenport is in communication with all places on the Mississippi and its navigable tributaries.

RAILROAD COMMUNICATIONS.

The city is touched by the following railroads:

Chicago, Rock Island, and Pacific Railroad, main line, from Chicago to Council Bluffs.

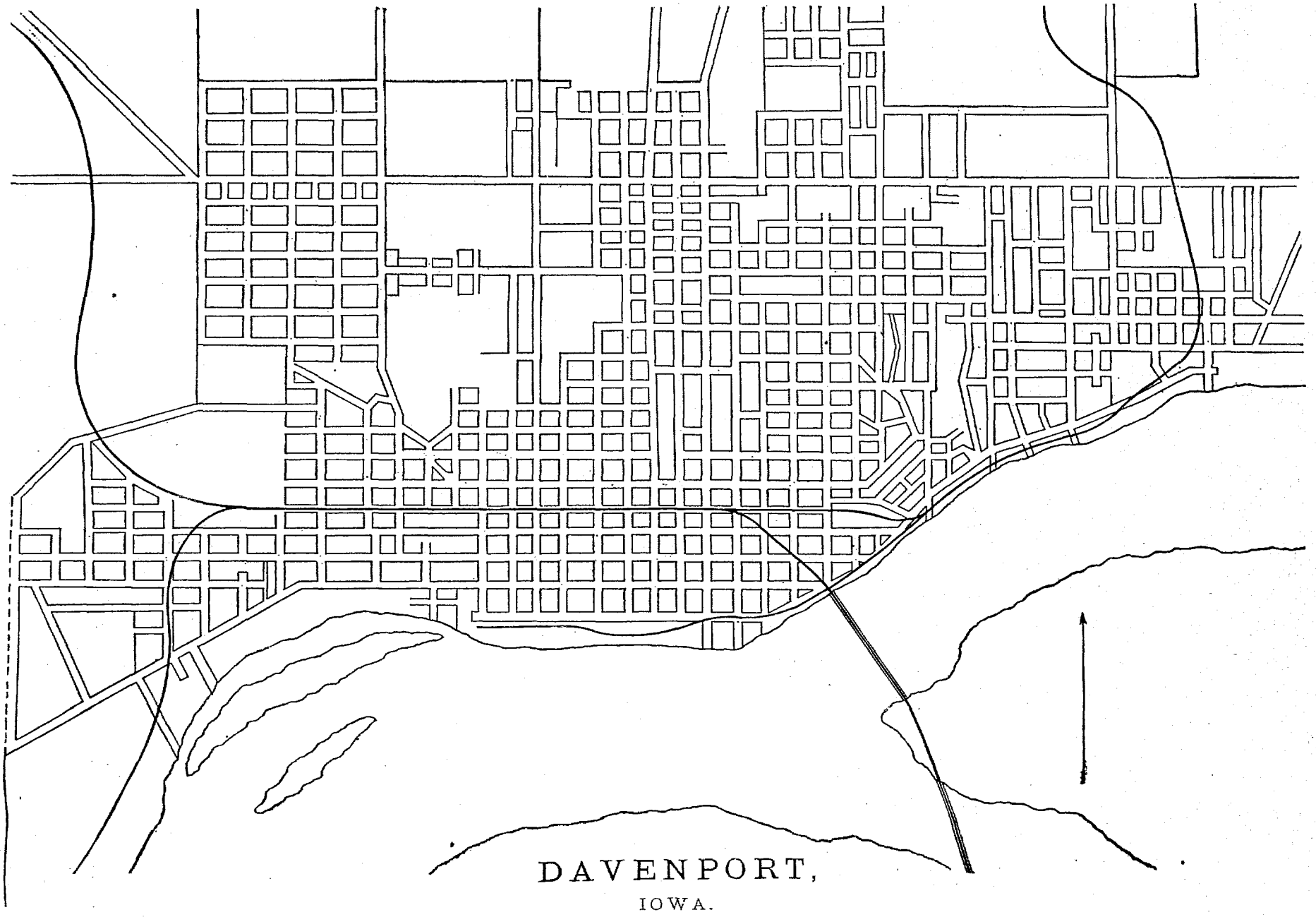
The Davenport division of the Chicago, Milwaukee, and Saint Paul railroad, from this point to Calmar, on the Iowa and Minnesota division of the same road.

TRIBUTARY COUNTRY.

The local trade of Davenport is almost exclusively confined to the supply of Scott county, which is entirely devoted to farming.

TOPOGRAPHY.

Davenport is divided by an escarpment into 2 plateaus, the lower being on an average 30 feet above low-water mark, and is composed of alluvial soil overlying Hamilton limestone (Niagara group, Devonian system), which rock in some places crops out and in others is buried many feet. The upper plateau is composed of drift exclusively, no rock being found in it except bowlders. It has an average elevation of 160 feet above low-water mark (of 1864). On the upper level the drainage of the plateau is by means of numerous ravines, which widen as they approach the river; these afford excellent conduits for the passage of the surplus water, and also for the sewerage of the city wherever they have been preserved. There are no lakes, ponds, or marshes near the city. The country in the vicinity is open, no forest trees being found, except on the banks of the Mississippi, and to a less degree along



DAVENPORT,

IOWA.

its small tributaries. The soil near Davenport is a dirt loam, of exceeding fertility, producing large crops of the cereals, especially Indian corn; of most of the fruits of the temperate zone, especially grapes; and also of roots, especially of Irish potatoes and onions. Indeed, for the production of the latter bulb, the soil of Scott county is so well adapted, and the growth so enormous, as to exceed that of any other county in the United States, and to make of Davenport another *Wethersfield* (Connecticut), indeed, much to surpass that famous town as an "onion mart".

CLIMATE.

During observations extending over 9 years the highest recorded summer temperature was 98°; highest summer temperature in average years, 93°. Lowest recorded winter temperature, —22°; and lowest winter temperature in average years, —15°. The prevailing winds are southwesterly in summer and northwesterly in winter, tending to increase the extremes of temperature more than the latitude and elevation would lead one to expect. Any decided change of wind in direction from the points named has a moderating influence.

STREETS.

The total length of streets is about 135 miles, of which 35 miles are paved with broken stone. The cost of this pavement per square yard, as nearly as it may be estimated, is $1 50; this does not include the gutters, which cost $1 25 per running foot. The sidewalks are chiefly of wood, a few being of stone or brick. Gutters are laid with flat stones. An ordinance lately passed fixes the width of streets north of Fifth street at 40 feet and the width of sidewalks at 20 feet, with 14 feet of the latter reserved for grass-plots and trees; but "so far this is only on paper." About $20,000 is annually expended for the repairs of streets, including the unpaved ones. The city authorities express a preference for contract work for large jobs, and day work for repairs. There is no stone-crusher, but a roller, weighing 5,000 pounds and drawn by horses, is used. There are 12½ miles of horse-railroads in the city, using 35 cars, with 96 horses and mules, and giving employment to 30 men. The number of passengers carried during the year was not stated. The rate of fare is 5 cents. There are no regular omnibus lines, but the hotels have omnibuses running to and from the railroad stations.

WATER-WORKS.

The water-works are owned by a private corporation, and their first cost was $500,000. The water is taken from the Mississippi river and pumped directly into the mains on the Holly system, the average pressure being about 80 pounds to the square inch. The estimated daily consumption is about 3,000,000 gallons. The average annual cost of maintenance and repairs is about $26,000. There are 22 miles of distributing mains and 242 hydrants. Dr. Farquharson says, regarding the water supply: "As the water supply of Davenport is drawn from the rapids, it is very highly aerated, so much so as to be of a milky color, and like soda-water when first drawn from the hydrants. This large admixture of atmospheric oxygen must have an important influence in destroying any organic matters, and hence add much to the wholesomeness of the water as a drink."

GAS.

The gas-works are not owned by the city. The charge per 1,000 feet is $2 50. The city pays $36 per annum for each street-lamp, 223 in number.

PUBLIC BUILDINGS.

The city owns and occupies for municipal purposes, wholly or in part, 1 city hall, costing $7,500; 1 police station and grounds, costing $15,000; and 1 pest-house and 5 engine-houses, costing $35,000; making total cost of all municipal buildings belonging to the city, $57,500. None of the buildings are owned in common with the county, which has a court-house of its own, costing $50,000, and proposes to erect a new one next year at a cost of $100,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are 3 parks, aggregating 7½ acres: *Court House Square*, 2¼ acres; *Washington Park*, 3 acres; with another of 2¼ acres. In addition to these, there is *Shooting Park*, area 25 acres. The former are owned by the city and the latter by a private company; it is, however, open to the public at all times, and, being situated on a high point overlooking the river, with many shade trees, is much resorted to. Washington park cost $5,000. The annual cost of maintenance for the 3 parks belonging to the city is $700, and they are controlled by a committee of the city council.

PLACES OF AMUSEMENT.

There are 2 theaters in Davenport: Burtis opera-house, seating capacity 2,000, is used by traveling companies, and the German theater, in Turner hall, seating 800, and in which performances are given every Sunday evening. The theaters pay an annual license of $75 each. Library hall, with stage, and Forest hall, seating 1,000 each,

Temperance hall, with a seating capacity of 600, and Metropolitan hall, seating 800, are used for concerts, lectures, etc. Among the concert- and beer-gardens are Washington gardens, area 4 acres, rebuilt in 1870 and lately sold for $5,000, and having an average attendance on Sundays during the summer of 1,000 persons; and P. N. Jacobs' summer garden, with an average attendance of about 500. The most prominent resorts of this class are situated outside the city limits.

DRAINAGE.

Until 1876 the entire drainage of the city was by surface gutters, with exception of a few private sewers. The system now adopted and partially built contemplates a sewer in each street running north and south, with laterals extending to the middle of the block on each side. Sewage is discharged into the Mississippi river. The mouths of sewers are submerged. Rates of fall are considerable, and no artificial flushing or cleaning is done. The cost of construction is assessed upon the abutting property on the basis of square feet of area extending to the middle of the block. The prices paid for building sewers in 1880 were as follows: Pipe sewer, 18 inches in diameter, 14 feet deep, length, 5,000 feet, $1 95 per foot, including manholes and basins; a 36-inch brick sewer, 14 feet deep, 3,500 feet long, $2 80 per foot; a pipe sewer 18 inches in diameter, 13 feet deep, 2,000 feet long, $1 80 per foot. The average cost of each inlet-basin is $35, and of each manhole $25.

CEMETERIES.

There are 5 cemeteries in Davenport, one owned by the city and the rest belonging to private institutions. There are no church-yard or private burial grounds in which interments are no longer permitted. The number of interments in all the cemeteries, so far as past records show, is: *City Cemetery*, during 18 years, 4,532; *Oakdale Cemetery*, during 8 years, estimated at 700; *Pine Hill Cemetery*, during 9 years, estimated at 380; *Saint Mary's Cemetery*, during 18 years, estimated at 2,400; and *Jewish Cemetery*, estimated at 200. The City cemetery is under charge of a sexton, appointed annually by the city council, and who has police powers. He sees that all graves are dug 5 feet deep, and is required to keep a record of all burials. Mr. Schmidt reports that, owing to the defective records of the private cemeteries, he can not communicate much information regarding them.

MARKETS.

There are no public or corporation markets in the city. Some time ago 2 buildings were erected for this purpose, but, as persons could not be induced to attend them, one was torn down and the other is now occupied as a store-room by various firms.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary organization of Davenport is the board of health, composed of the mayor, 3 aldermen, 2 citizens, one of whom is a physician, and the city clerk, *ex-officio* clerk of the board. The board is appointed annually by the mayor, subject to the confirmation of the city council. The expenses of the board last year were $700, which was expended for removing nuisances, and during epidemics this sum can be increased to any amount deemed necessary by the council. In the absence of epidemics the board has full power over the general health and sanitary condition of the city, while during epidemics it has power to meet the emergency in any way necessary. The mayor is chairman of the board and also executive officer, with sufficient powers to cause all orders and regulations to be complied with. The board meets once a week in summer and once a month in winter, and conducts its business as a deliberative body. The city marshal acts as health-inspector, and can arrest persons for creating a nuisance or otherwise endangering the public health. Inspections are made regularly in all parts of the city. When nuisances are reported they are ordered to be abated or removed within 12 hours, and if this order is not complied with the board has the work done and the cost assessed on the property where the nuisance exists. The same mode of procedure is observed toward defective house-drainage, cesspools, privy-vaults, sources of drinking-water, etc. The board has full power over the conservation and removal of garbage. Burial permits are issued by the city clerk on certificates of death signed by the attending physician.

INFECTIOUS DISEASES.

Small-pox patients are taken to the public pest-house, situated north of the city limits, or quarantined at home. Scarlet-fever cases are quarantined at home. Physicians are required promptly to report to the board of health any case of contagious disease to which they may be called to attend, and all clothing, bedding, etc., exposed to contagion must be fully disinfected before being removed. Vaccination is not compulsory, nor is it done at the public expense. The board recommends that every child should be vaccinated before 2 years of age, and all persons should be revaccinated as often as once in every 5 years.

REPORTS.

By a new state law all births and deaths must be reported to the city clerk by the attending physician, or other persons, and a record is kept of them. The board reports to the state board of health presumably once a year.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city, with its own force and wholly by hand. The macadamized streets are cleaned perhaps about twice a year, but none of the streets are ever swept. The estimated cost of the work is $500 per year, and the street dirt removed is used to fill other streets. Concerning the merits and defects of the system, Mr. Schmidt says: "Not enough street-cleaning done to answer the above."

Removal of garbage and ashes.—All garbage and ashes are removed by the city under contract. They are required to be kept in tight receptacles and placed in the rear of residences, convenient for removal. Ashes and garbage may be kept in the same vessel, and they are both disposed of by being dumped into the river. The annual cost is $500. No nuisance or probable injury to health results from the manner of keeping, handling, or disposing of the garbage.

Dead animals.—The carcass of any animal dying within the limits of the city must be removed by the owner, and if he is not known, then the city has the carcass removed and disposed of, generally sending it to a rendering establishment. The cost of the service is nothing, and the number of dead animals removed annually is not known.

Liquid household wastes.—Where sewers exist the liquid wastes from the houses run into them; where there are no sewers the wastes go into cesspools and vaults, none being allowed to pass into the paved gutters. The cesspools are mostly porous, are not provided with overflows, receive the wastes from water-closets, and are cleaned out in the same manner as privy-vaults.

Human excreta.—Nearly all the houses in the city depend on privy-vaults; not more 2½ per cent. have water-closets, nearly all of which deliver into the sewers. Very few of the privy-vaults are water-tight. The only regulations concerning the construction of vaults is that they must be at least 20 feet from any well or spring the water from which is used for drinking purposes. The vaults are cleaned out at least once a year by regular night scavengers, with covered water-tight carts; and between May 1 and November 1 the contents must be disinfected before being removed. The night-soil is deposited on a scow and dumped into the Mississippi river 2 miles below the city. The dry-earth system is used only to a limited extent, probably not more than 10 cases.

Manufacturing wastes.—Liquid wastes, when not injurious to health, are not regulated; injurious wastes are disposed of as ordered by the board of health.

POLICE.

The police force of Davenport is appointed and governed by the police committee, composed of the mayor and 3 aldermen. The chief of police, salary $900 a year, is the executive officer, and has direction and supervision over the department. The remainder of the force consists of 1 captain at $60 a month, and 14 patrolmen at $50 a month each. The uniform is what is known as the "New York regulation", and the city gives each man $5 a month for his uniform and a chain "come-along". The men are on duty 12 hours at a time and patrol 15 miles of streets. During 1880 there were 842 arrests, principally for disturbing the peace, and the cases were finally disposed of by fines or work on the city stone-yard. During the past year property to the value of $716 15 was reported to the police as lost or stolen, and the amount rescued and returned to the owners during the same time was $813 70. There were 750 station-house lodgers in 1880, as against 1,178 in 1879. No free meals are furnished to lodgers. The police are not required to co-operate with the health or building department, as the city marshal and his deputies attend to this. Special policemen, or watchmen for private property, and also to assist the regular force, are appointed by the mayor. The yearly cost of the police force (1880) is $10,920.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Davenport for 1880, being taken from tables prepared for the Tenth Census by James R. Graham, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	Average number of hands employed.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries	188	$2,806,222	1,473	82	150	$685,469	$2,960,668	$4,468,978
Agricultural implements	3	325,000	187	.....	.....	68,558	167,615	344,900
Blacksmithing (see also Wheelwrighting)	16	16,952	16	.....	1	8,447	9,650	30,555
Boots and shoes, including custom work and repairing	14	41,440	33	1	3	15,894	18,580	52,230
Bread and other bakery products	7	97,700	39	2	1	17,105	95,610	132,015
Brick and tile	6	30,500	53	.....	9	12,804	6,350	25,750
Carpentering	10	50,400	51	.....	9	29,805	92,755	147,600
Carriages and wagons (see also Wheelwrighting)	4	35,870	35	.....	1	23,400	26,383	65,500
Clothing, men's	13	110,900	82	30	1	62,068	109,759	209,378
Confectionery	3	19,650	7	5	1	4,320	55,800	78,000
Cooperage	4	16,700	33	.....	.....	12,060	29,590	47,642

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Flouring- and grist-mill products	5	$123,000	36	.....	.....	$19,458	$569,585	$644,699
Foundery and machine-shop products	3	76,500	51	.....	3	26,050	50,300	99,250
Furniture	5	110,500	91	1	2	40,212	61,732	124,650
Liquors, malt	4	205,000	62	.....	.....	24,135	103,590	178,370
Lumber, sawed	5	655,000	240	.....	64	101,800	576,350	828,080
Marble and stone work	4	20,500	19	.....	1	9,805	13,810	31,031
Printing and publishing	4	79,500	45	9	3	29,213	53,986	108,123
Saddlery and harness	9	16,200	21	.....	2	8,645	19,317	33,585
Sash, doors, and blinds	3	135,000	83	.....	25	40,240	252,182	333,475
Slaughtering and meat-packing, not including retail butchering	3	285,000	49	.....	.....	7,310	266,559	273,634
Tinware, copperware, and sheet-iron ware	14	49,100	36	.....	.....	15,907	29,365	64,202
Tobacco, cigars and cigarettes	15	70,380	73	22	7	45,178	82,102	184,000
Wheelwrighting (see also Blacksmithing; Carriages and wagons)	4	4,780	6	.....	1	2,102	3,810	8,438
All other industries (a)	30	230,650	125	12	16	50,903	265,822	417,302

a Embracing bookbinding and blank-book making; boxes, wooden packing; brass castings; brooms and brushes; coffee and spices, roasted and ground; coffins, burial cases, and undertakers' goods; cordage and twine; engraving, wood; hairwork; leather, curried; leather, tanned; lock- and gun-smithing; looking-glass and picture frames; malt; mineral and soda waters; models and patterns; painting and paperhanging; paints; paving materials; photographing; roofing and roofing materials; shirts; soap and candles; trunks and valises; vinegar; and window blinds and shades.

From the foregoing table it appears that the average capital of all establishments is $14,926 71; that the average wages of all hands employed is $402 03 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is $20,289 94.

DES MOINES,

POLK COUNTY, IOWA.

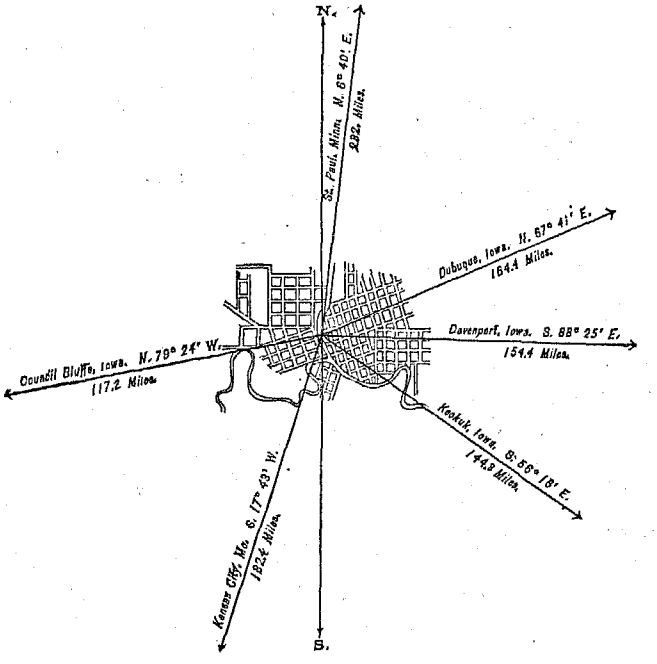
POPULATION

IN THE

AGGREGATE,

1850-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	502
1860	3,965
1870	12,035
1880	22,408



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	11,531
Female	10,877
Native	18,205
Foreign-born	4,203
White	21,787
Colored	*621

*Including 9 Chinese.

Latitude: 41° 36′ North; Longitude: 93° 88′ (west from Greenwich); **Altitude: 780 feet.**

FINANCIAL CONDITION:

Total Valuation: $4,361,090; per capita: $195 00. Net indebtedness: $578,000; per capita: $25 79. Tax per $100: $5 18.

HISTORICAL SKETCH.(a)

The present site of the city was originally a part of the Sac and Fox Indian reservation. On the 11th of October, 1842, the government purchased the reservation from the Indians, and, for the better protection of the settlers against depredations from the Pottawattomies and Sioux, on May 9, 1843, a detachment of troops reached this point, landing where Court Avenue bridge now stands. Barracks were immediately erected and the post was named "Fort Des Moines", taking its name from the river flowing past it. The county of Polk was organized by the legislature in 1846, and a board of commissioners, appointed for the purpose, fixed upon Fort Des Moines as the county-seat. The first survey of the town was made July 8, 1846. On September 22, 1851, the citizens voted to have it incorporated as a town, articles of incorporation being adopted by the people October 18, and the first election occurring 2 days after. This was ratified by the legislature in 1853, and in 1854 an act was passed by

a The following sketch was furnished by J. P. Bushnell, esq., secretary of the board of trade.

which Fort Des Moines became the capital of the state. In 1857 the archives of the state were removed from Iowa City and deposited in the new state-house, and in the same year *Des Moines* was incorporated as a city without the prefix "Fort".

Des Moines has rapidly yet substantially grown into prominence as one of the leading cities of the West. Her progress of late has been most marked in the direction of wholesale trade and manufactures, all of which are in a prosperous condition. Pork-packing has become a prominent industry, the packers having paid out over $1,000,000 for hogs during 1879. The amount of capital employed in coal-mining is between $350,000 and $400,000, and the products of the mines in 1879 amounted to 125,000 tons. The proximity of coal, and an inexhaustible water-power, serve to stimulate the increasing manufacturing industries of the city. The immense trade that centers here is supported by the country for hundreds of miles in extent, reaching into the territories beyond.

The growth of the city has been very rapid since the opening of the railroads, which center here from every part of the state and make this place a convenient market for a large number of flourishing towns and villages.

Des Moines has never been visited by any disastrous conflagrations, neither have there been any serious business depressions, other than those affecting the country at large. The population comprises many nationalities, none of which have supplanted others previously established.

DES MOINES IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Des Moines:

LOCATION.

Des Moines lies near the center of the state, in latitude 41° 36′ north, and longitude 93° 88′ west from Greenwich, on the Des Moines river, at the junction of the Raccoon river, 154 miles west of Davenport, and 138 miles east of Omaha by rail. The altitude of the city, as given for the observatory of the Smithsonian Institution, is 780 feet above sea-level. The rivers on which the city lies are not navigable, but it is thought that the Des Moines river can be improved so that steamboats can ascend from its mouth, the Mississippi at Keokuk, to this point.

RAILROAD COMMUNICATIONS.

The city is touched by the following railroads:

The Chicago, Rock Island, and Pacific railroad, main line, from Chicago to Omaha.

The Chicago, Burlington, and Quincy railroad, Des Moines line to Burlington, Iowa.

The Des Moines division of the Chicago and Northwestern railroad between the points named, connecting at Waukee with the Des Moines and Northwestern railroad to Panora, Iowa.

TRIBUTARY COUNTRY.

The country immediately tributary to Des Moines is strictly agricultural, cereals and live stock, principally hogs, being the chief products. The retail trade of the city extends to a distance of 30 miles in all directions, while the wholesale trade embraces northwestern, western, and southwestern Iowa, and reaches into Nebraska, Kansas, and Dakota.

TOPOGRAPHY.

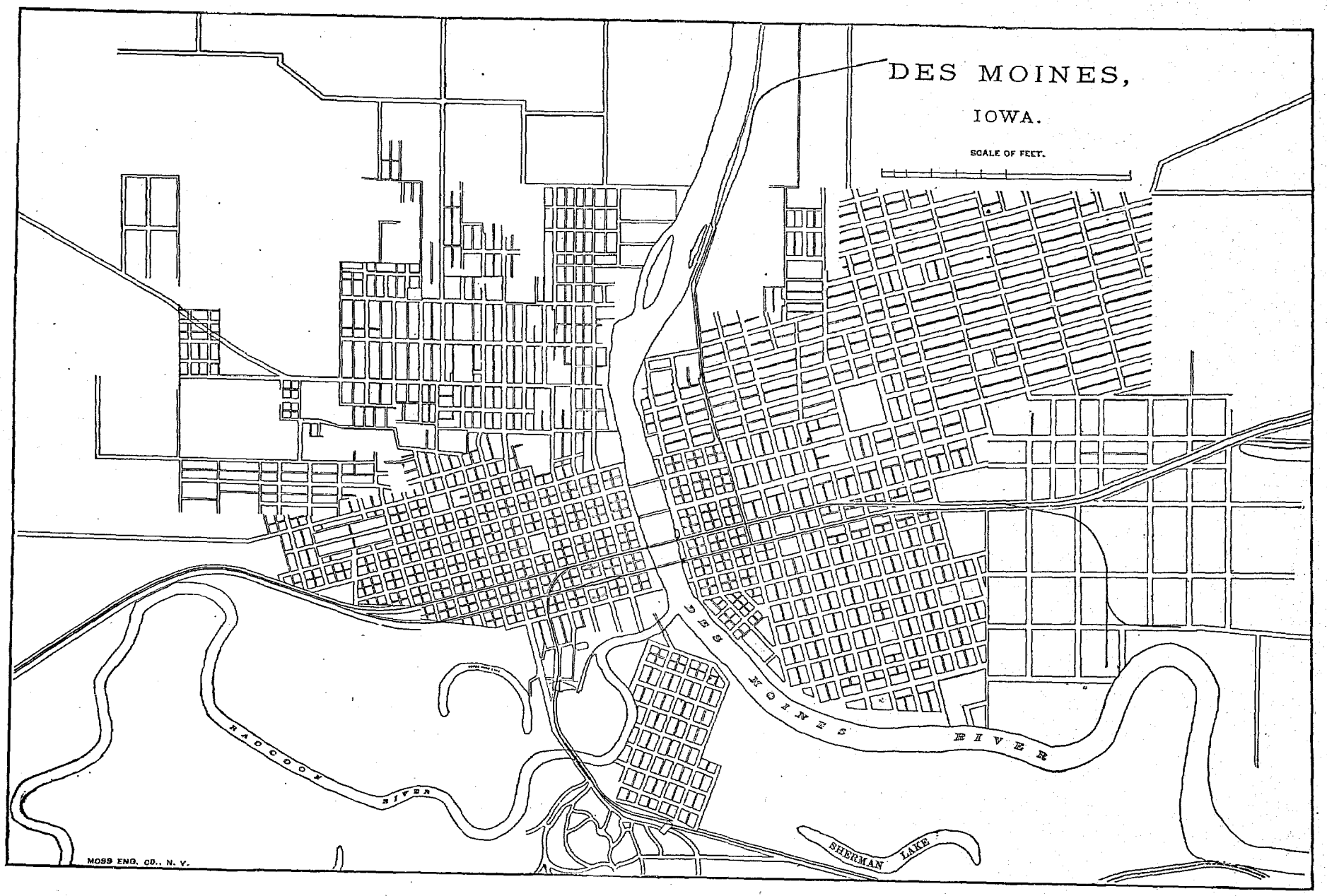
The city is situated at the confluence of two rivers, the Des Moines and the Raccoon, which are spanned by 8 handsome and substantial bridges, with a plateau on either side skirted by bluffs, rising in gentle acclivities and forming fine residence sites. The level portion is large enough to accommodate all the business of the city. The total area of the city included in the corporate limits, and all suitable for building purposes, is about 12 square miles. The soil is alluvial, underlaid with limestone of a poor quality and soft coal. The natural drainage is into the rivers, and is good. The surrounding country is high and rolling, with no marshes, ponds, or lakes, and, with the exception of along the numerous streams that intersect it in every direction, is open prairie without timber. The soil within a radius of 5 miles is the same as that on which the city is built.

CLIMATE.

Highest recorded summer temperature, 106°; highest summer temperature in average years, 96°. Lowest recorded winter temperature, −25°; lowest winter temperature in average years, 15°. The south winds are warm and damp, while those from the west and northwest are dry and cool.

STREETS.

The length of the streets in the city is about 200 miles, and, with the exception of 2 blocks on Fourth street laid in gravel, none of them are paved. In his annual report for 1880 the mayor says: "It is a subject for congratulation that the council realizes the necessity of immediate action in the direction of street improvements, and that preliminary steps have been taken for the adoption of a general plan of street-pavement." The


DES MOINES,
IOWA.
SCALE OF FEET.
RACCOON RIVER
DES MOINES RIVER
SHERMAN LAKE
MOSS ENG. CO., N. Y.

sidewalks are of brick flag-stones and wood, and the gutters are paved with stone. Trees are planted along the sides of streets just inside the gutters. Streets are improved by day labor under the direction of the street commissioner, the annual cost being $20,000. It is said that the street repairs are of such a character that they can not be done by contract.

HORSE-RAILROADS.

There are 3½ miles of horse-railroads in the city, using 6 cars and 24 horses, and giving employment to 10 men. The number of passengers carried during the year was not stated. The rate of fare is 5 cents. There are no regular omnibus lines, but 3 omnibuses run between the railroad stations and hotels, carrying passengers at rates of 25 and 50 cents.

WATER-WORKS.

The water-works are owned by a private corporation, and their first cost was $350,000. Water is taken from the Raccoon river and pumped directly into the mains on the Holly system, the pressure being from 80 to 150 pounds to the square inch. The estimated consumption is about 2,000,000 gallons per diem. The yearly cost of maintenance is not stated. The annual receipts from water-rates is said to be $35,000. Water-meters are used. There are 20 miles of distributing mains and 187 hydrants.

GAS.

The gas-works are not owned by the city. The daily average production is 60,000 cubic feet. The city pays $2 25 per month for each street-lamp, 452 in number.

PUBLIC BUILDINGS.

The city owns municipal buildings costing $2,500, including 2 hose-houses, 1 pest-house, and a house at the cemetery. There is no city hall, the council room, etc., being rented, and no buildings are owned in common with the county. In addition to the city buildings, there are the state-house, costing $3,500,000; the United States court-house and post-office, costing $200,000, and the county court-house.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The mayor reports one park in the city, area 2 acres, but gives no statistics concerning it. The county court-house is surrounded by fine grounds, which are ornamented with a fountain and shrubbery, and much resorted to.

PLACES OF AMUSEMENT.

There are three theaters in Des Moines—two opera-houses, seating 1,000 and 800, respectively, and the Academy of Music, seating 800. These theaters pay an annual license of $40, $60, and $100 respectively. In addition to these, there are several halls that are occasionally used.

DRAINAGE.

There are in Des Moines a few private drains, but neither these nor the water-courses are included in the regular sewerage system. Nothing has been done with water-courses except to put culverts or bridges at points where they cross streets. A regular plan of sewerage has been adopted, and all sewers have been built in accordance therewith. Sewage is discharged into the rivers below the city, and is conducted to the outfalls by intercepting sewers. The mouths of outfalls are exposed, but their dry-weather flow is delivered by iron pipes under the surface of the river. There is no provision for ventilation, but the plan provides that, when streets shall be paved, perforated iron manhole covers shall be substituted for the wooden ones now used. In very dry weather it is sometimes necessary to flush the intercepting sewers. Stationary iron flood-gates are built for the purpose. All the cost of constructing sewers is assessed upon abutting property, except when the contract price exceeds $3 per linear foot. All excess above $3 per foot is paid by the city, and in streets where there are lots on only one side the excess above $1 50 per foot is paid by the city. Assessments are laid by area of all property within 150 feet of the street on which a sewer is built, except when a regularly laid-out alley intervenes; in such cases the assessment goes only to the alley.

Sewers in 1880 cost as follows: One 30 inches diameter, 12 feet deep, $3 10 per foot; one 60 inches diameter, 14 feet deep, $6 20 per foot; one 48 inches diameter, 12 feet deep, $5 13 per foot, including manholes and catch-basins. The city ordinances require all sewers not exceeding 20 inches in diameter to be built of sewer pipe, while those exceeding 20 inches may be built of one ring of best quality of hard-burned or vitrified sewer brick. All sewers shall be laid by contract, and persons proposing for the work must deposit with the city engineer a sample of the pipe or brick they propose to use. No information is given of the extent or total cost of work.

CEMETERIES.

There are five cemeteries, one of 65 acres, one of 20 acres, one of 10 acres, one of 5 acres, and one of 2 acres, all within the corporate limits of the city. There are no church-yards or private burial grounds in which interments

are no longer permitted. The records of the several cemeteries not having been regularly kept, it is impossible to give any statistics concerning the number of interments made in them. In the city cemetery, on the east and west sides of the river, burial permits are required from the mayor; there is no limit of time after death for interments, and the depth of graves is 4 feet. In the other cemeteries these matters are arranged either by the church or by the order to which the cemetery may belong. Lots are deeded to individuals with no special restrictions in regard to the care of them. The grounds in the cemeteries are laid out with avenues and walks, and ornamented with trees, shrubbery, and flowers. The average price of lots is 10 cents per square foot.

MARKETS.

There are no public or corporation markets, but the mayor in his annual message strongly advocates that the city erect a building for this purpose at an early day.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary organization of Des Moines is vested in the board of health, composed of the full city council, with the mayor as president. By statute the board has authority to make regulations in regard to public health and to carry the same into effect. The expenses of the board are limited only as other expenses of the several departments are, and its authority, either in absence of or during epidemics, is absolute. The mayor, as president, is the chief executive officer, and has sufficient police powers to cause the removal of nuisances, etc. The board transacts its business as a deliberative body. Inspections are not made regularly. When nuisances are reported, resolutions are offered to abate them. The board has no custom concerning the inspection and correction of defective house-drainage, privy-vaults, cesspools, sources of drinking-water, etc. Defective sewerage and street-cleaning are under the direction of the marshal. The board has no control over the conservation and removal of garbage, and has made no regulations concerning the burial of the dead, the pollution of streams, or the removal of excrement. Small-pox patients are taken to the public pest-house, situated outside the city, while cases of scarlet fever are neither isolated nor quarantined at home. No measures against the breaking out of contagious diseases either in public or in private schools have been taken. Vaccination is compulsory, and is done at the public expense.

The record of births, diseases, and deaths is kept by the county clerk. The board reports to the state board of health once a year.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city, with its own force, and wholly by hand The business streets are cleaned about every 30 days, and the other streets when they need it. The work is reported as being well done. The annual cost is $500, and the sweepings are deposited on vacant ground and used for filling-up purposes. "The system is not good, as it is mostly done by prisoners who don't like to work;" "place of deposit good enough, as it reclaims waste land."

Removal of garbage and ashes.—Garbage is removed both by the city and by householders, the former doing its share with its own force. While awaiting removal, the garbage is kept in vessels and must not be mixed with ashes. Garbage is finally disposed of by being buried, while ashes are thrown on waste lands. The annual cost of the service was not stated. The system is said to be not so good as it will be. The mayor says: "The ordinance prohibiting people from depositing ashes, *débris*, and filth in the streets and alleys is entirely ignored, rendering it almost impossible at times to get through them with a loaded wagon, and seriously endangering the health of the citizens on the approach of warm weather."

Dead animals.—The carcass of any animal dying within the city limits is removed and buried by the marshal, if the owner is not known. The annual cost of the service is nominal, and no record of the number of dead animals of different kinds removed is kept.

Liquid household wastes; human excreta.—Where sewers exist the liquid household wastes are run into them, none being allowed to pass into street-gutters or into cesspools. What cesspools there are are porous and are cleaned out in the same manner as vaults. The larger part of the houses depend on privy vaults, none of which are even nominally water-tight. They are required to be cleaned by regular licensed scavengers, and, except where the odorless excavator process is used, this cleaning must be done between the hours of 11 p. m. and 4 a. m. The night-soil is thrown into the river.

Manufacturing wastes.—The liquid manufacturing wastes are run into the ground, but in a short time will be carried off by the sewers.

POLICE.

The police force of Des Moines is appointed by the mayor, and is under his exclusive control, the city council merely fixing the number of men and the wards they shall be taken from. The force is composed of 1 chief of police, who is the executive officer, salary $55 a month, and 1 captain and 8 patrolmen at $50 a month each. In addition there are 1 marshal at $800 per annum; 2 deputy marshals at $50 a month each, and 2 specials from each of the seven wards, who are subject to call, and when on duty rank the same as the regular force. The uniform is of blue navy or army cloth, and is made after that worn by officers of United States infantry. Each suit complete

costs about $35, and the men provide their own. Patrolmen are equipped with revolvers, clubs, and duplex whistles; the hours of duty are from 6 a. m. to 6 p. m., and each beat covers about 2 miles. During the past year 1,037 arrests were made, the principal causes being for drunkenness, assault and battery, larceny, keeping or frequenting houses of ill-fame, and disturbing the peace. The final disposition of these cases was not stated. During the year property to the value of $1,489 was reported to the police as lost or stolen, and of this, $805 was recovered and returned to the owners. There were 298 station-house lodgers in 1880, as against 249 in 1879. The police force co-operates with the fire department by protecting property at fires, and, if necessary, by enforcing necessary regulations for fire protection; and with the health department by abating nuisances and seeing that streets and alleys are kept clean. The yearly cost of the police force (1880) is $9,900.

His Honor, William H. Merritt, mayor, who furnished the foregoing information concerning police, closes the report as follows:

My observation teaches that cities are best governed where there is but one police department. In cities of the first class in Iowa the law provides for marshal and deputies, whose duty it is to see that the ordinances are executed, streets and alleys cleaned, nuisances abated, order preserved during sittings of the council, and mandates of police court executed. This could all be done by the regular force at less cost and avoid unprofitable jealousy and rivalry between two departments.

FIRE DEPARTMENT.

The last annual report of the chief engineer shows the manual force of the department to consist of 1 chief and 2 assistant engineers, 3 drivers, and 20 men, making a total of 26. The apparatus consists of 1 steam fire-engine, 2 hook-and-ladder trucks, 6 hose-carriages, and 3,850 feet of hose. There are 13 horses owned by the department. During the past year there were 36 fires and 1 false alarm. The losses from fire aggregated $6,398 65, and the total amount of insurance involved was $21,580 60. The cost of the fire department for the year was $6,162 62.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Des Moines for 1880, being taken from tables prepared for the Tenth Census by J. P. Bushnell, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	Average number of hands employed.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries	155	$1,463,250	1,211	71	96	$667,699	$2,810,396	$4,220,709
Agricultural implements	3	55,000	18	.....	.....	8,000	14,200	46,200
Blacksmithing (see also Wheelwrighting)	5	3,300	8	1	.....	4,700	5,100	14,500
Boots and shoes, including custom work and repairing	5	7,500	16	.....	.....	7,350	8,240	22,195
Bread and other bakery products	6	14,050	31	1	.....	13,995	41,000	64,362
Brick and tile	3	12,700	80	.....	12	21,000	12,375	42,000
Carpentering	5	17,000	52	.....	.....	28,900	94,500	142,750
Carriages and wagons (see also Wheelwrighting)	4	22,500	27	.....	.....	13,750	27,000	53,000
Clothing, men's	13	60,700	43	13	.....	39,050	70,300	134,600
Cooperage	3	3,000	17	.....	.....	9,100	21,100	32,300
Flouring- and grist-mill products	7	142,500	40	.....	.....	13,105	204,380	230,235
Foundery and machine-shop products	8	94,000	75	.....	4	46,702	50,823	151,848
Furniture	4	47,500	29	.....	8	17,600	45,500	80,000
Liquors, malt	5	84,000	25	.....	.....	10,605	35,610	81,295
Marble and stone work	5	43,000	36	1	.....	20,100	21,600	68,700
Painting and paperhanging	3	4,800	14	.....	.....	8,580	21,000	36,700
Paving materials	3	4,100	14	.....	.....	5,000	6,300	16,000
Printing and publishing	13	320,500	148	21	14	136,102	174,850	390,438
Saddlery and harness	4	5,100	16	.....	1	6,200	24,000	39,000
Tinware, copperware, and sheet-iron ware	8	32,000	35	.....	.....	18,442	47,200	109,400
Tobacco, cigars and cigarettes	5	17,700	32	4	4	20,700	36,050	74,500
Wheelwrighting (see also Blacksmithing; Carriages and wagons)	6	8,500	11	.....	.....	5,300	5,150	14,074
All other industries (a)	37	463,800	444	30	53	212,518	1,844,118	1,358,612

a Embracing bookbinding and blank-book making; boxes, cigar; brass castings; brooms and brushes; coffee and spices, roasted and ground; confectionery; corsets; engraving and die-sinking; files; glucose; hairwork; hardware; liquors, distilled; lithographing; looking-glass and picture frames; lumber, planed; lumber, sawed; oil, linseed; pumps; roofing and roofing materials; scales and balances; shirts; slaughtering and meat-packing; soap and candles; steam fittings and heating apparatus; stereotyping and electrotyping; stone- and earthen-ware; vinegar; wirework; and woolen goods.

From the foregoing table it appears that the average capital of all establishments is $9,440 32; that the average wages of all hands employed is $484 54 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is $23,005 73.

DUBUQUE,

DUBUQUE COUNTY IOWA.

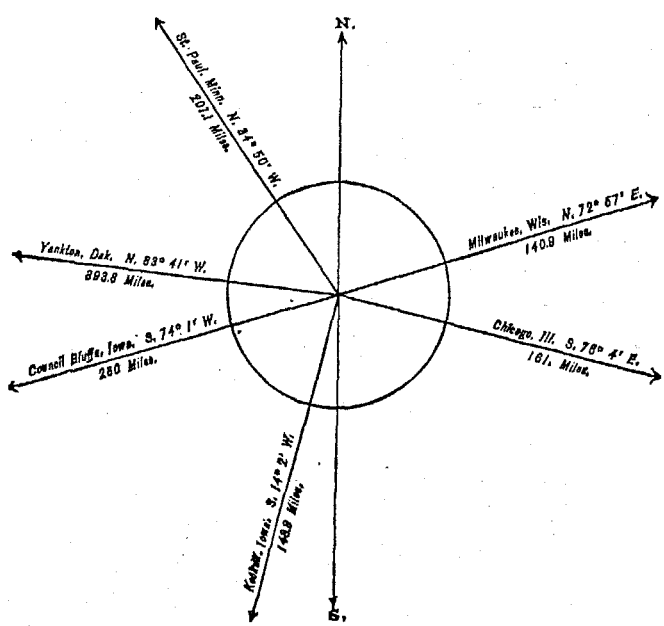
POPULATION

IN THE

AGGREGATE,

1850-1880.

	Inhab.
1790	
1800	
1810	
1820	
1830	
1840	
1850	3,108
1860	13,000
1870	18,434
1880	22,254



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	10,855
Female	11,399
Native	16,107
Foreign-born	6,147
White	22,106
Colored	*148

* Including 2 Chinese and 1 Indian.

Latitude: 42° 30' North; Longitude: 90° 40' (west from Greenwich); **Altitude: 588.05 to 908.25 feet.**

FINANCIAL CONDITION:

Total Valuation: $13,000,000; per capita: $584 00. Net Indebtedness: $804,611; per capita: $36 16. Tax per $100: $2 00.

HISTORICAL SKETCH.

From 1788 to 1810 Julien Dubuque, a Frenchman, obtained from the Indians permission to work the lead mines in this vicinity. His associates and followers continued the same business until the year 1830. In the summer of 1832 the Black Hawk war closed, and the Indian title to the eastern part of Iowa was extinguished. In the fall of the same year a few permanent settlers began to mine. In 1836 the mines were incorporated in the territory of Wisconsin. Iowa became a separate territory. Dubuque became an incorporated village in 1837 and a city in 1841. The Illinois Central railroad reached the river in 1855. No great ravages of fire have occurred. In 1857 a financial crash ended the speculation fever, which raged beyond all reason. Since 1869 the city has begun to recover, and has nearly doubled its population and business. Manufactures increased from $3,194,000 in 1870 to $5,000,000 in 1878. Population has been made up from all sources and nationalities. Americans were the principal early settlers.

DUBUQUE IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Dubuque:

LOCATION.

Dubuque, capital of the county of Dubuque, is situated on the right bank of the Mississippi river, 470 miles north of Saint Louis, 200 miles south of Saint Paul, and 199 miles west of Chicago. It is opposite the point where the line between Wisconsin and Illinois reaches the river, and is in one of the richest lead regions known. It is the chief depot of the lead region of Iowa, Illinois, and Wisconsin. It is the center of a large and ever-widening trade, and during the season of navigation has several lines of steamers to Saint Louis and Saint Paul. It has large and increasing manufactures of shot, steam-engines, farming implements, machinery, brick, white lead, leather, wooden ware, etc. In railroad facilities, in schools, churches, societies, both secular and religious, and all the institutions usually accompanying a thriving American city of its size, Dubuque is amply endowed. The city is connected with Dunleith (Illinois) by an iron railway bridge.

The average depth of water in the river at low water is 7.6 feet, the variation of level between high and low water is 21.8 feet, the average width of the river here is 2,300 feet, the harbor capacity is 20 acres, and the current flows from 1½ to 2 miles per hour.

RAILROAD COMMUNICATIONS.

Dubuque has the following railroads:
The Chicago, Dubuque, and Minnesota railroad, running to La Crosse, Wisconsin.
The Chicago, Clinton, and Dubuque railroad, running to Clinton, Iowa.
The Illinois Central railroad, running to Cairo.
The Iowa division of the Illinois Central railroad, running to Sioux City.

TRIBUTARY COUNTRY.

The country surrounding Dubuque is devoted to agriculture and lead mining and smelting.

TOPOGRAPHY.

The business portion of the city is built on a sandy and gravelly soil, reaching from the surrounding bluffs to the river, with natural drainage toward the river and a gradual descent of 50 feet. Encircling the above site are bluffs averaging in height 200 feet above the river, separated by ravines, through which the elevated residence portion of the city is reached. These bluffs are formed of Galena limestone and are covered with a clay soil. Several miles north of the city is a small lake surrounded by low meadow land. There are some unfilled sloughs between the city and the river. The surrounding country for a radius of from 5 to 15 miles is about half covered with wood, chiefly oak, of recent growth.

CLIMATE.

Highest recorded summer temperature, 99°; highest summer temperature in average years, 97.33°. Lowest recorded winter temperature, —20°; lowest winter temperature in average years, —12°. The elevated lands near are a protection against wind. Few severe hurricanes have visited the city, while to the eastward they have often occurred. Northwest winds are cold and clear, and easterly winds moist and raw.

STREETS.

Dubuque's improved streets and alleys measure 29.07 miles in length, of which 0.234 mile is paved with stone blocks, while there are of broken stone 16.39 miles curbed and guttered, 8.11 miles of streets and 3.84 miles of alleys only macadamized. Stone-block pavement costs $1 25 and broken stone 30 cents per square yard. The stone-block pavement is by far the easier to keep clean. On the principal streets the sidewalks are chiefly brick or stone; elsewhere they are mostly plank. Gutters are from 4 to 6 feet in width and are laid with stone. Trees are planted along the curb-line, 2 feet from the edge of the curbstone. No grass places in the streets exist. The construction of streets is done by contract, repairing by the day. The average annual cost of improvements to streets, alleys, and sewers for the past 3 years has been $38,702 74, and the average expense per year of repairs and street-cleaning, $11,397 36. The average cost of grading streets by contract in 1878 was 14.5 cents per cubic yard; that done by the city, employing men needing work, some of whom are old and feeble, cost per cubic yard 17.7 cents. The cost of macadamizing per cubic yard by contract was 79.3 cents; by day's work, $1 049. A steam stone-crusher has been used by a contractor. There is also used a road roller, drawn by horses, the weight of which is not

sufficient to make it very effective. There is a short steam-railroad of a total length of 1.7 mile running in the streets of the city. It ascends 260 feet, its steepest grade is 443 feet to a mile, uses 3 cars and 2 motors, employs 6 men, and carries annually 120,000 passengers at a fare of 5 cents.

The horse-railroads are 3 miles in length, run 14 cars, use 24 horses, employ 11 men, and, at a fare of 5 cents, annually carry 240,000 passengers.

WATER-WORKS.

The water-works are owned by a private corporation, and their total cost was $155,000. Water is received in two reservoirs—one of 1,500,000, and one of 250,000 gallons capacity—that are situated at the mouth of a valley which drains an extensive area of lead mines, and from there is taken to a distributing reservoir of 1,220,000 gallons, being supplied to the city by gravity. The water is pure, with carbonate of lime in solution. The yearly cost of maintenance is $4,000, and the income from water-rates is $12,000.

GAS.

The gas-works are owned privately. The daily average production is 50,000 cubic feet, for which the charge per 1,000 feet is $3 50. The city pays annually $30 for each of its 276 street-lamps, 100 of these being supplied with gasoline.

PUBLIC BUILDINGS.

The city owns and occupies for municipal purposes a city hall, four buildings for fire purposes, a sexton building, and a city hospital. The total cost of municipal buildings belonging to the city is $53,000, the city hall alone costing $50,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The only public parks in the city are the two squares laid out by the government for this use, called *Washington Park* and *Jackson Park*. They are laid out with walks, planted with shade trees, and furnished with a pagoda or music stand. Their total cost was $3,000, and the yearly cost of maintaining them is about $500. They are controlled by a "committee on public grounds and buildings" of the city council.

PLACES OF AMUSEMENT.

Dubuque has one theater, the Opera House, seating 850. Theaters pay a yearly license to the city of $100. Of amusement halls there are Kistler's hall and Rush's hall, used for lectures, dances, and concerts; Turner's hall, used for concerts and dances, and Tabernacle hall, used for lectures, concerts, and meetings. Of concert- and beer-gardens, there are the Pagoda, at the Western brewery, built in 1878; dimensions of building, 100 by 25 feet; cost $2,500, and seats 200 persons; there are pleasure-grounds adjoining, and it is in summer well patronized; and Centennial beer-gardens, built in 1876; dimensions of building, 60 by 30 feet; cost $1,000; has grounds attached 110 by 600 feet in dimensions, and costing $3,000; seats 500 persons, and is tolerably well patronized. Formerly an adjoining tract of ground was used as a garden, and styled the Tivoli; also the Northern brewery park, or beer-garden, 100 by 400 feet in dimensions, costing $2,000.

The foregoing is all that was furnished concerning the present condition of Dubuque.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Dubuque for 1880, being taken from tables prepared for the Tenth Census by Abram S. Bunting, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	Average number of hands employed.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries	346	$3,446,806	2,619	292	92	$1,339,730	$3,837,846	$6,328,880
Blacksmithing (see also Wheelwrighting)	8	6,750	24	.....	.....	12,250	4,525	23,880
Bookbinding and blank-book making	4	17,750	15	3	6	9,100	8,000	24,300
Boots and shoes, including custom work and repairing	34	41,475	80	4	1	38,000	64,825	128,100
Bread and other bakery products	15	55,135	51	9	3	26,558	92,107	140,004
Brick and tile	8	12,600	84	.....	.....	16,000	9,502	35,300
Carpentering	26	28,200	389	.....	.....	161,277	149,100	355,550
Carpets, rag	7	480	8	1	.....	3,700	4,450	14,000
Carriages and wagons (see also Wheelwrighting)	9	532,000	283	.....	.....	150,050	324,250	627,000
Clothing, men's	18	241,150	71	188	1	60,500	254,875	403,000
Cooperage	10	58,150	109	.....	8	55,750	70,030	168,651

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Dentistry, mechanical	6	$5,000	10	.....	.....	$9,300	$2,075	$16,430
Flouring- and grist-mill products	4	30,000	14	.....	.....	5,030	69,740	83,257
Foundery and machine-shop products (see also Steam fittings and heating apparatus).	4	157,500	109	.....	.....	57,500	86,960	181,320
Furniture	6	87,500	159	.....	1	70,250	100,600	219,000
Hairwork	3	3,700	2	9	2	3,100	6,750	12,300
Liquors, malt	6	265,000	63	.....	.....	26,975	110,132	211,125
Lock- and gun-smithing	6	2,500	5	.....	.....	2,900	650	6,204
Looking-glass and picture frames	4	4,000	10	.....	.....	4,750	7,000	17,500
Lumber, sawed	4	295,000	160	.....	23	53,000	212,200	345,000
Marble and stone work	7	7,650	28	.....	.....	15,450	13,200	37,058
Masonry, brick and stone	19	3,396	107	.....	.....	43,210	52,775	121,450
Painting and paperhanging	11	6,950	47	.....	2	24,250	15,150	50,900
Photographing	7	5,500	12	7	1	9,400	2,045	17,100
Printing and publishing	8	111,800	74	8	9	56,252	38,300	137,475
Saddlery and harness	7	63,300	36	.....	.....	18,124	42,500	78,227
Sash, doors, and blinds	3	114,000	71	.....	15	50,000	191,000	284,000
Slaughtering and meat packing, not including retail butchering	5	183,000	153	.....	1	86,500	1,237,400	1,379,000
Steam fittings and heating apparatus (see also Foundery and machine-shop products).	3	50,400	61	.....	.....	37,000	36,000	90,800
Tinware, copperware, and sheet-iron ware	16	21,850	44	.....	.....	22,250	28,250	74,100
Tobacco, cigars and cigarettes	10	9,600	34	.....	1	14,822	18,275	45,750
Vinegar	3	53,000	24	.....	.....	12,350	35,535	89,650
Watch and clock repairing	10	6,050	18	.....	.....	11,000	2,770	24,300
Wheelwrighting (see also Blacksmithing; Carriages and wagons)	10	5,600	29	.....	.....	12,500	9,450	34,100
All other industries (*a*)	45	959,080	305	63	23	151,842	535,565	813,396

a Embracing agricultural implements; awnings and tents; bags, paper; baskets, rattan and willow-ware; bellows; boxes, paper; brass ware; bridges; brooms and brushes; carriage and wagon materials; clothing, women's; coffee and spices, roasted and ground; coffins, burial cases, and undertakers' goods; confectionery; dyeing and cleaning; files; furs, dressed; hats and caps; iron work, architectural and ornamental; lead, bar, pipe, sheet, and shot; lightning rods; lime; liquors, vinous; mattresses and spring beds; mineral and soda waters; models and patterns; roofing and roofing materials; shipbuilding; shirts; show-cases; soap and candles; tobacco, chewing, smoking, and snuff; trunks and valises; upholstering; wirework; and wooden ware.

From the foregoing table it appears that the average capital of all establishments is $9,962 04; that the average wages of all hands employed is $446 13 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is $15,561 81.

KEOKUK,

LEE COUNTY, IOWA.

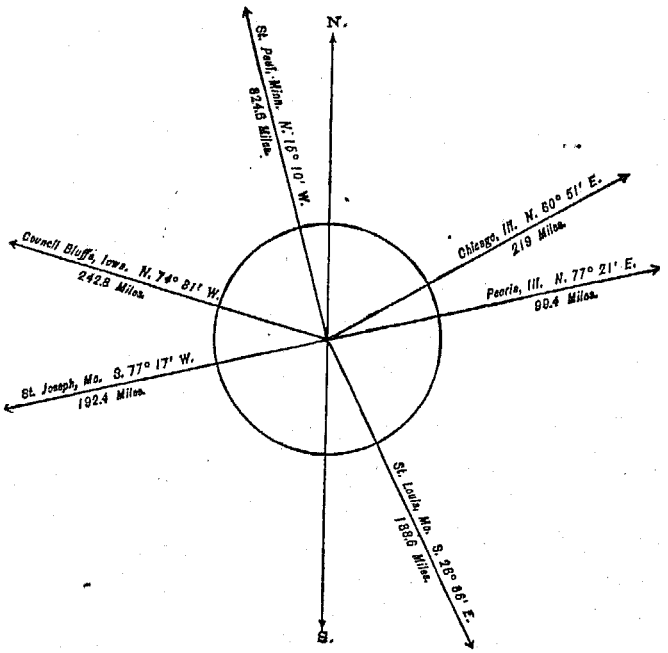
POPULATION

IN THE

AGGREGATE,

1850-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	2,478
1860	8,136
1870	12,766
1880	12,117



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	5,813
Female	6,304
Native	9,850
Foreign-born	2,267
White	11,034
Colored	*1,083

*Including 1 Chinese and 1 Indian.

Latitude: 40° 25′ North; Longitude: 91° 21′ (west from Greenwich); **Altitude: 495 to 658 feet.**

FINANCIAL CONDITION:

Total Valuation: $4,104,155; per capita: $339 00. Net Indebtedness, $372,375; per capita: $30 73. Tax per $100: $3 60.

HISTORICAL SKETCH.

The first cabin built on the site of the present city of Keokuk was erected by Dr. S. C. Muir, a graduate from the university of Edinburgh, in the year 1827. In 1831 the first white child was born here. There have been but few ravages by fire that have not been speedily obliterated. In 1856 there was a period of great excitement; lots were sold for fabulous prices; grand buildings were erected, and speculation ran mad. Then followed the financial depression of 1857, and Keokuk suffered. The city is now recovering from it, after a steady growth in wealth and prosperity for 24 years. The substantial wealth, indicated by buildings, improvements in living, bank deposits, and exchanges, libraries, churches, trade and manufactures, is as marked here as in any town of the same size in the state. The population was generally from Pennsylvania and Ohio, with representations from nearly all nations and states.

KEOKUK IN 1880.

The following statistical accounts, collected by the Census Office, which are, owing to the paucity of information sent by the city authorities, not so full as could be wished, indicate to some extent the present condition of Keokuk:

LOCATION.

Keokuk lies in the extreme southeast corner of the state, in latitude 40° 25′ north, and longitude, 91° 21′ west from Greenwich, on the west bank of the Mississippi river, near its confluence with the Des Moines river, at the foot of what are known as the "lower rapids", and 200 miles by river above Saint Louis. The altitudes above sea-level are: lowest point, the city datum line between high and low water marks, 495 feet; average, corner of High and Second streets, 648 feet; and highest, corner of Grand avenue and Thirteenth street, 658 feet. In Reid's addition, adjoining the city, grades have been run at an elevation of 667 feet above sea-level. Keokuk was formerly at the head of low-water navigation above Saint Louis, but the completion of the government canal around the rapids now makes navigation above uninterrupted. Draft at low water, 5 feet; maximum velocity at low water, 3 miles an hour; range of river between high- and low-water mark, 22 feet. The river has a width of 2,600 feet at low water, and 5,500 feet at high water. The slope of the river-bed over the rapids averages 2 feet 2 inches to the mile. Water communication is open to all points on the Mississippi and its navigable tributaries.

RAILROAD COMMUNICATIONS.

The city is touched by the following trunk lines:

The Keokuk and Des Moines division of the Chicago, Rock Island, and Pacific railroad, to Des Moines, and connecting there with the main line.

The Saint Louis, Keokuk, and Northwestern railroad, to Saint Louis.

The Iowa division of the Wabash, Saint Louis, and Pacific railroad, to Chicago, Illinois.

The Keokuk branch of the Chicago, Burlington, and Quincy railroad, to Burlington, Iowa.

TRIBUTARY COUNTRY.

The region which gives Keokuk a local trade embraces 3 counties: Lee, in Iowa; Clark, in Missouri; and Hancock, in Illinois. This region is agricultural, producing the principal varieties of grains and grasses common to this latitude, as well as fruits, apples, pears, peaches, and berries, the latter growing very profusely. The farm stock, principally cattle and hogs, are of improved breeds, and much of the grasses and corn is marketed by means of fat cattle and hogs. The country roads leading from the city are laid out after the western plan, and "are as good as the general run". A bridge over the Mississippi river, and another over the Des Moines river, greatly facilitate the bringing of farm produce to the city, while the several railroads radiating from this point further extend the trade of Keokuk. In addition to the agriculture of the surrounding country, there are several manufacturing industries in the city, notably pork-packing, the making of shoes, beer, stoves, engines, plows, etc. Much money has been invested in vineyards and the appliances necessary to make wine.

TOPOGRAPHY.

Keokuk is in the center of the "Geode" bed. The limestone belongs to the Keokuk formation, and bears with it fine specimens of the Crinoids. It is used for building, macadamizing, and the manufacture of lime. There are sandstones of the coal measure; also the Saint Louis, Warsaw, and Keokuk groups. The magnesia limestone crops out at the medium elevation. There are no lakes. The "ponds" are made by the overflow of the Mississippi. The country, for a radius of 5 miles, is open. Originally the site of the village was covered with a heavy growth of timber, which has since been cut off. The islands in the river, the high banks on the Illinois side, and the banks of the small streams are, however, still well covered with trees. As a general rule, the soil is alluvial, from 4 to 6 feet deep, with occasional clay surfaces, and places where the limestone crops out. Within a radius of 4 miles there are several springs, more or less valuable, not noted, however, for any special medicinal quality.

CLIMATE.

Highest recorded summer temperature, 102°; highest summer temperature in average years, 98°. Lowest recorded winter temperature, −26°; lowest winter temperature in average years, −15°. The record from which these figures are taken extends over a period of 7 years. It is stated that "the Mississippi river in moderate stages never affects the general health; after high water, vegetable decomposition favors development of periodical fevers, neuralgia, fluxes, etc." The marshes "conduce somewhat to malarial fevers varied in type", while the northwest winds "generate acute lung diseases and precipitate development of tuberculosis in those predisposed to it".

STREETS.

Total length, 90 miles, of which 12 miles are paved with broken stone and 4 miles with gravel. The cost per square yard of each, as nearly as it may be estimated, is, for broken stone 32 cents, and for gravel 16⅔ cents. "Macadam broken from limestone is an improvement over mud, but has the serious defect of being dusty in dry weather and muddy in wet. Gravel is being abandoned as both expensive and defective in every particular." The sidewalks are of plank and brick, usually good, and the gutters are of cobble-stones. Trees are not planted in the streets. The construction and repair of streets are paid for out of the general fund, the amount being expended by the supervisor, who keeps no itemized accounts. The city engineer expresses a preference for contract work instead of day work for the construction and repair of streets, "as contractors can be made reponsible; while if left in the hands of the city by day work there might be as many heads as there are aldermen".

There are no horse-railroads in the city. An omnibus line, with 7 vehicles and 20 horses, and employing 9 men, carries about 28,500 passengers annually at 25 cents each, including one piece of baggage.

WATER-WORKS.

The water-works are owned by a private corporation, and their first cost was $100,000. Water is taken from the Mississippi and pumped directly into the mains on what is known as the Holly system, the available head being from 35 to 75 pounds. The estimated daily consumption is about 70 gallons per head of the population. The annual cost for maintenance and repairs is $5,000, and the yearly income from water-rents is $11,500. Water-meters are used in a few cases, and when used are found materially to reduce the consumption of water.

GAS.

The gas-works are not owned by the city. The daily average production is 30,000 cubic feet. The charge per 1,000 is $3 50. The city pays $32 per annum for each street-lamp, 140 in number, which includes lighting, repairs, etc.

PUBLIC BUILDINGS.

The city owns and occupies for municipal purposes 1 "calaboose" and 2 engine-houses, the actual cost of which was $8,000; also a pest-house, costing $1,800. There is no city hall, a floor being rented for city offices, etc., in the Odd Fellows' building, corner of Seventh and Main streets.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are several parks in Keokuk, with a total area of 18 acres and costing $5,000, which have been set aside in the various additions to the city. None of them have been improved.

PLACES OF AMUSEMENT; DRAINAGE; CEMETERIES; MARKETS.

No information on these subjects was furnished by the city authorities.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary organization of Keokuk is the board of health, composed of the mayor *ex officio*, 2 aldermen, and 1 physician. The board is appointed by the city council, and may be said to be subject to its control. In ordinary times the annual expenses of the board are $150, for salary and incidentals, and during epidemics this amount is not limited by ordinance. The board has a general supervision over the health of the city, the cleanliness of streets, alleys, public places, lots, yards, etc., and may enter at any time during daylight to examine the same; can cause all nuisances to be abated; has power to remove all persons infected with contagious diseases, to provide for and compel vaccination; and can enforce any reasonable sanitary regulations necessary to protect the city against Asiatic cholera and other epidemics. The mayor, *ex officio* president of the board, with a salary of $100 per annum, is the executive officer, and sees that the health ordinances and regulations of the board are properly enforced. He has power to command what assistance may be needed from the marshal. No assistant health officers or inspectors are employed. Inspections are made only as nuisances are reported or "carelessly discovered". When a nuisance is found to exist, the property-owner or tenant is ordered to abate it, and if this is not done the president of the board is required to file an information and abate the nuisance, the expense being charged against the property. The board exercises no control over the conservation and removal of garbage, other than to see that it does not become a nuisance. There are no special regulations concerning the burial of the dead.

INFECTIOUS DISEASES.

Small-pox patients are isolated by being removed to the public pest-house, situated 2 miles north of the city, on high bluffs overlooking the river. Scarlet-fever patients are neither isolated nor quarantined at home, "except

by public sentiment, or rather fear". The board can, if it deems it necessary, close all schools in the case of the breaking out of diseases of a contagious nature. As to vaccination, it is either compulsory or it is not, as "the ordinance may be interpreted either way". It is done at the public expense only when persons are too poor to pay.

REPORTS.

Deaths, with the diseases causing them, are registered. "Births too numerous to keep track of, and no ordinances compelling registration." The board reports once a year to the council, and the reports are only published by courtesy of the daily papers.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city, wholly by hand and whenever needed. No account is kept of the service, and the sweepings are deposited anywhere that is convenient. There is no system, the work being done very imperfectly and not as often as it should be.

Removal of garbage and ashes.—Garbage and ashes are removed by the householders, and "everybody do as they please".

Dead animals.—The carcasses of dead animals are disposed of under the direction of the city marshal, horses, etc., going to the glue factory.

Liquid household wastes.—Part of the liquid household wastes are run into sewers and the rest into cesspools and vaults. There are no regulations as to the disposal of either liquid or solid manufacturing wastes. The gutters are not artificially flushed.

Human excreta.—All the houses in the city are said to depend on privy-vaults. The night-soil is dumped into the river below the city.

The city engineer, in returning the schedules on the above subject, says: "No one pays attention to these things here, and I haven't time on the present pay to investigate this as you ask."

POLICE.

No information on this subject was communicated.

NEBRASKA.

LINCOLN,

LANCASTER COUNTY, NEBRASKA.

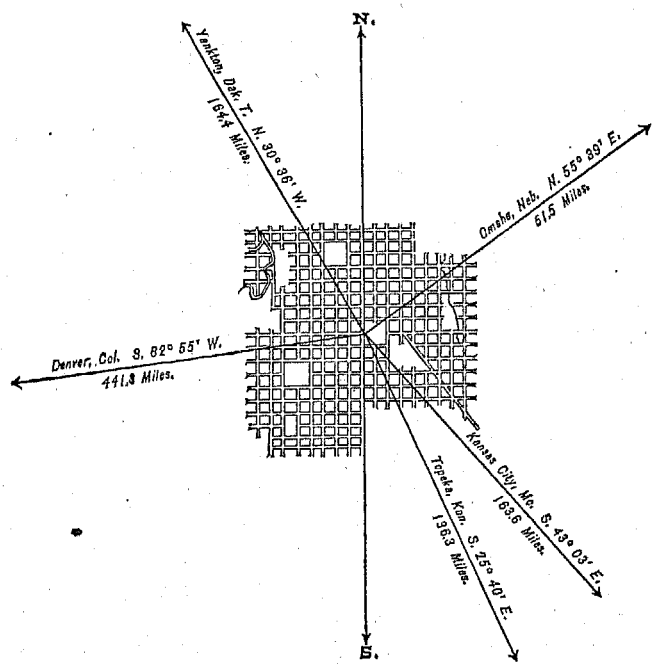
POPULATION

IN THE

AGGREGATE,

1870-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	.....
1860	.....
1870	2,441
1880	13,003



POPULATION

BY

SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	7,140
Female	5,863
Native	10,596
Foreign-born	2,407
White	12,424
Colored	*579

*Including 3 Chinese.

Latitude: 40° 50' North; Longitude: 96° 45' (west from Greenwich); **Altitude: 1,647 feet.**

FINANCIAL CONDITION:

Total Valuation: $1,133,389; per capita: $87 00. Net Indebtedness: $199,615; per capita: $15 35. Tax per $100: $6 75.

HISTORICAL SKETCH.

Nebraska was a part of the Louisiana territory ceded to the United States by France in 1803. It was visited by Lewis and Clark in 1804–'05, and they are believed to have been the first white explorers to pass through it from east to west. In 1854 it was formed into a separate territory, and in February, 1867, Nebraska was admitted into the Union. Previous to this time there had been but one house on the present site of Lincoln, but, it having been selected as the location for the state capital, buildings began to spring up on every side. It was laid out by 3 state commissioners, and in the following January the legislature met there for the first time. In 1868 the erection of a state penitentiary was begun, and since then additions costing $200,000 have been made. In 1870 the state

university was built here at a cost of $150,000, the money being the proceeds of the sale of lots. This institution opened in 1871 with 70 students, and now has 300. The state insane asylum was built here in 1870, and was burnt down and rebuilt in 1872. A large opera-house built in 1873 was burnt down, but was rebuilt the next year. The United States court-house and post-office cost $160,000. Two sessions of the United States court are held each year. A new capitol is in process of erection, to cost, when completed, $450,000; one wing has already been finished at a cost of $100,000.

LINCOLN IN 1880.

The following statistical accounts, mainly gathered by the Census Office, indicate the present condition of Lincoln:

LOCATION.

Lincoln, the capital of the county of Lancaster and of the state of Nebraska, is situated in the eastern part of the state, southwest of Omaha, and directly west of Nebraska City. In the Smithsonian publications its altitude is given as 1,647 feet above sea-level, but the reports forwarded by Professor Samuel Aughey, of the state university, gives its lowest altitude at 1,164, and its highest at 1,208 feet. Salt creek, a stream from 40 to 60 feet in width, runs through the city and empties into the Platte river some 25 miles to the northeast. Oak and Middle creeks empty into Salt creek on the northwest side, and Antelope creek flows along the east side of the city. None of these streams are navigable.

RAILROAD COMMUNICATIONS.

Lincoln lies on the Omaha and Republican Valley branch of the Union Pacific railway, the branch connecting with the main line at Valley, 58 miles from Lincoln and 35 miles from Omaha. It is also on the Burlington and Missouri River Railroad in Nebraska, several divisions of which intersect here. The Burlington and Missouri River division of this line runs from Kearney junction through Lincoln to Plattsmouth, where it connects with the Chicago, Burlington, and Quincy for Chicago and the East; a branch runs from Oreapolis, on this division, up to Omaha; the Nebraska Railway division runs from Nebraska City through Lincoln to Central City; the Atchison and Nebraska division runs from Atchison, Kansas, through Lincoln to Columbus.

TRIBUTARY COUNTRY.

The country surrounding Lincoln is gently rolling and is intersected by many small streams. The soil is rich, and about half of it is under cultivation. The great majority of the people are engaged in farming; corn is the leading product; next comes wheat, and then the other cereals. There is much stock-raising, cattle and hogs being most extensively raised. The general business of the city is with the farmers of the vicinity.

TOPOGRAPHY.

Lincoln is largely built on slopes running down to Salt creek on the north and west, and to Antelope creek on the east. The higher elevations toward the south have some fine residences. The surface soil is loess; underneath this there is a drift material, and underneath that in turn is dark-brown sandstone of the Dakota group of the Cretaceous; this in turn is underlaid by the Permian rocks. The surface drainage is into Salt and Antelope creeks. Taken as a whole, the site would be called gently rolling. Its highest portions are on a level with the highest portions of the surrounding country, but the terrace on which the main part of the city is built averages a few feet below the general level. The country for a radius of five miles is generally open. Two miles north of the city there is a salt marsh covering about 600 acres, on which at the present time water stands.

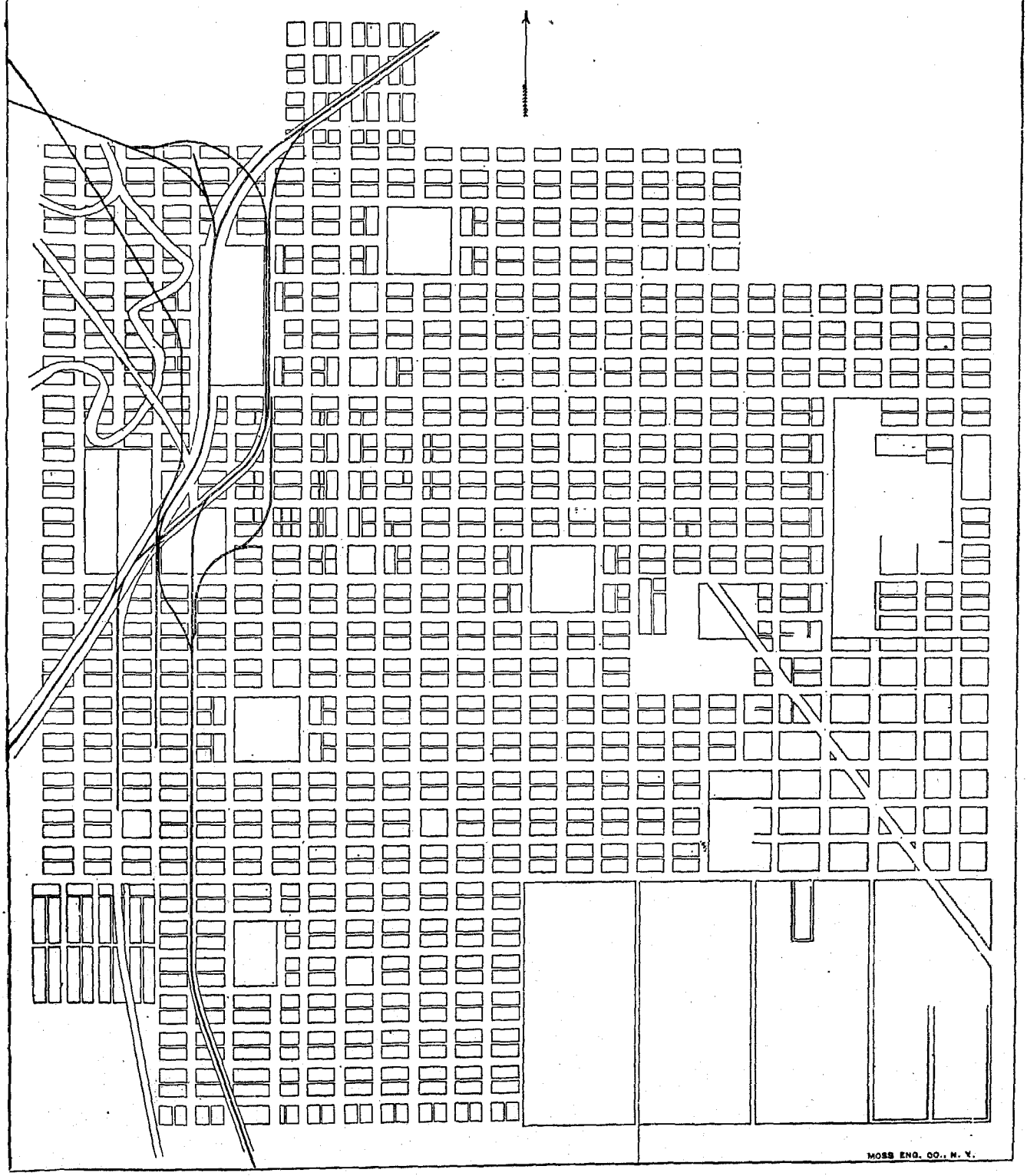
CLIMATE.

The highest recorded summer temperature is 113°; the highest in average years, 96°. The lowest recorded winter temperature is −30°; the lowest in average years, −15°. The numerous streams in the vicinity give Lincoln a moister atmosphere than is usually found in this longitude. There are no marshes or elevated lands near enough to affect the climate. The most prevalent winds are those from the southwest. If such a wind changes suddenly to the northeast, rain or snow is sure to follow. Occasionally in summer this southwest wind is nearly suffocating, and in rare cases it even burns vegetation. Next to these, the north and northeast winds are most common. The latter in winter are cold and piercing.

STREETS.

There are no pavements in the city. The streets are generally repaired by day labor, under the direction of the overseer of streets, the annual cost being about $6,000. The city authorities report that they find it much cheaper to use contract work for large and day work for small jobs. Trees are planted in rows four feet from the lines of the lots, along the sides of the streets. The work is all done and the expenses are met by the lot-owners.

LINCOLN, NEBR.



MOSS ENG. CO., N. Y.

There are no horse-railroads, but a herdic line has recently been established, on which the fare is 5 cents.

WATER-WORKS.

The city is preparing to build water-works.

GAS.

The gas-works are not owned by the city. The charge for gas is $4 per 1,000 feet.

PUBLIC BUILDINGS.

The city occupies one building for municipal purposes. It cost $4,500. The public buildings here owned by the state have been mentioned in the historical sketch.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There is a city park, with an area of 10 acres, but it can hardly be called a pleasure-ground, for its improvement has received little attention. The land was set apart for park purposes by the state commissioners when the city was located in 1867, and cost the city nothing. The city expends very little on it, not over $50 to $100 per year. It is controlled by the mayor and city council.

PLACES OF AMUSEMENT.

There is one theater, with a seating capacity of 1,200. It pays an annual license to the city of $100. There is a city hall, with a seating capacity of 1,000, used for all sorts of public purposes, and besides this, there are one or two minor halls. There are no concert- or beer-gardens.

DRAINAGE.

There is no system of sewerage in Lincoln. Storm-water and surface drainage flow through natural channels into the ravines, which have been straightened in some places, but which are still open ditches. A storm-water sewer has been laid near the surface in the business portion of the city. It begins with a wooden box 4 by 6 feet, and enlarges to 6 by 8. For most of its length it consists of a stone-paved bottom with sides of plank, and is covered sometimes with plank and sometimes with an arch of two feet rise. It is not more than half a mile long, and discharges into an open ditch about half a mile from Salt creek. A number of drains from cellars, markets, and other places discharge into this storm drain, but not from any vaults or cesspools. A 12-inch-pipe sewer from the post-office, Arlington hotel, and *State Journal* block extends about three-quarters of a mile to Salt creek. It takes also the overflow of mineral water from an artesian well and the drainage from the baths supplied by it. All other sewage goes into vaults or cesspools.

CEMETERIES.

There are 2 cemeteries connected with the city, one Protestant and the other Catholic. They are located 1½ mile east of the city. The former contains 80 acres and the latter 10 acres. There are no complete records of interments. There is no limit of time of burial after death. The depth of grave is 5 feet. The revenue from the sale of lots in *Wyuka*, the Protestant cemetery, is used exclusively for beautifying and improving the grounds, walks, fences, etc. This cemetery has been surrounded with a substantial fence, has been laid out with walks, parks, drives, etc., and a good sexton's house has been built, all from the proceeds of the sale of lots. The ground for it was donated by the state legislature in February, 1869, for a state cemetery, to be called "Wyuka cemetery", with a provision that the city of Lincoln should elect 3 trustees to have the control and management of it.

MARKETS.

There are no public or corporation markets in the city. Pedlers or hawkers carrying articles for sale in a cart must pay a license of $10 per annum, but this rule does not apply to retail venders of vegetables, eggs, butter, and produce raised by themselves in their own farm or garden.

SANITARY AUTHORITY—BOARD OF HEALTH.

The mayor, the chairman of the committee of the city council on fire, police, and health, and the city marshal constitute the board of health of the city. None of these officials are necessarily physicians. When there is no epidemic the expenses of the board are merely nominal. In case of an epidemic its authority is unlimited. At any time it may call to its assistance such medical aid and advice as it may deem necessary. It has general supervision of the health of the city, and has power to take all necessary steps to promote cleanliness and the sanitary condition of the city, to abate nuisances, and to enforce any and all lawful measures necessary to prevent the spread of contagion. All the orders, rules, and regulations of the board are made known to the public by the proclamation of the mayor. Inspections are made only when nuisances are reported, but the chief of police is supposed to have

general charge of such matters. If a nuisance is not abated within a reasonable time after the board orders it, the delinquent is arrested and fined. The board meets only when called together by the mayor. It has never exercised any control over the removal of garbage, or its conservancy while awaiting removal. The only regulation concerning the burial of the dead seems to be that they must be buried outside the city limits. The removal of excrement generally comes under the charge of the chief of police rather than the board of health.

INFECTIOUS DISEASES.

There is no practice about small-pox, as there have been no cases of this disease in the city. The board has never had scarlet-fever patients isolated, nor has it treated this differently from ordinary diseases. The city has had no cases of serious contagious diseases breaking out in the public schools. There is no public pest-house. Vaccination is not compulsory, nor is it done at the public expense.

REPORTS.

There is no system of registration of births, diseases, or deaths. The board has never made a report, except in one year, when it was constituted differently from what it is now. It was then composed of physicians appointed by the mayor and council, but it was so arbitrary that it did not give satisfaction.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned by the city's own force by hand, and the work is said not to be done very efficiently. The sweepings are deposited outside the city limits.

Removal of garbage and ashes.—Garbage is removed both by the city and by householders. The part done by the city is done by its own force. The only regulation as to the conservancy of garbage while awaiting removal is that it shall not become so offensive as to create a nuisance. Ashes and garbage are never kept in the same vessel. Garbage and ashes are removed outside the city limits. No nuisance or injury to health from improper treatment of garbage has been noticed.

Dead animals.—By a city ordinance, dead animals must be removed outside the corporation limits and buried by their owners. When the owners can not be found the police take charge. The annual cost of this service to the city is about $100.

Liquid household wastes.—Laundry- and kitchen-slops are generally thrown on the ground; chamber-slops into cesspools. Only a small part of the waste goes into the public sewers, and none of it into gutters. Cesspools and dry wells are very porous, and therefore are not provided with overflows. There are few water-closets, and such as there are empty into sewers. In the center of the city the contamination of drinking-water by the escape of the contents of cesspools is becoming very great, and the question of water-works is being agitated. The ordinances require that cesspools should be kept clean and not allowed to become offensive.

Human excreta.—Nearly all the private dwellings in the city depend on privy-vaults; the hotels have water-closets which empty into the sewers. As has been said, all water-closets empty into sewers and none into cesspools. The dry-earth system is very little used. Privy-vaults, if within 20 feet of a street, dwelling, shop, or well, must be 8 feet deep and made tight, according to the city ordinances, and all privy-vaults must be cleansed by using lime or some other disinfectant once in each week between June 15 and September 15 in each year. During that time no vault may be emptied without permission of the health officers, and it must be done between 11 p. m. and 4. a. m.

Manufacturing wastes.—The city has very few manufactories, and they are compelled to bury all substances which would be injurious to health or offensive if not removed.

POLICE.

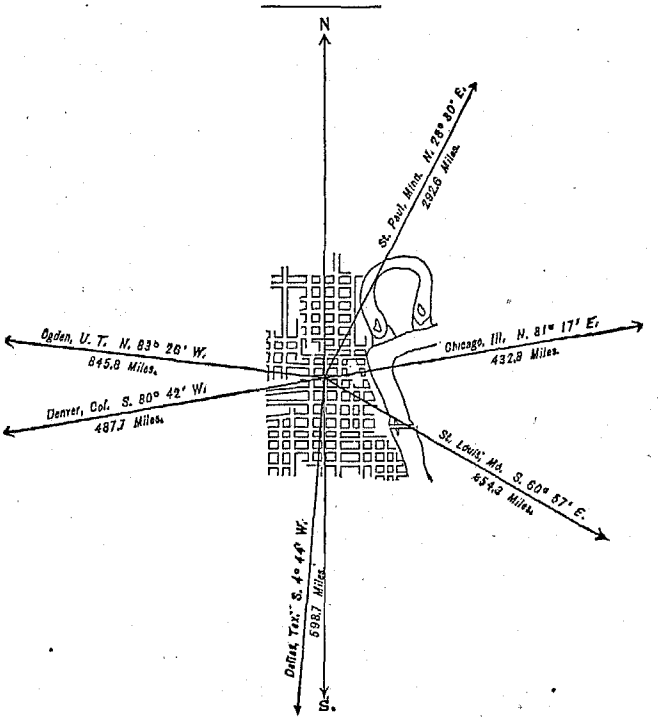
The police force is appointed by the mayor, confirmed by the city council, and governed by the mayor and council. The chief executive officer is the chief of police, who has general superintendence of the force, and receives a salary of $720 per year and certain fees. There are 6 patrolmen, receiving $600 per year each. Their uniform is navy blue in color, and they wear helmet caps, shield badges, and belts, and carry rosewood batons. They furnish their own clothing, but hats, badges, belts, and batons are supplied by the city at a cost of about $10 per man per year. Besides their batons they carry revolvers, nippers, and whistles. The night men are on duty from 7 p. m. to 5 a. m., and the day men from 7 a. m. to 6 p. m. They patrol about 7 miles of streets in all. In 1880 there were 264 arrests, of which 121 were for being drunk and disorderly, 95 for prostitution, 16 for larceny and assault, 9 for vagrancy, 8 for felony, and the rest for minor offenses. Of these, 48 were dismissed, 7 were bound over to the district court, and the rest were fined or committed to jail. About $1,000 worth of property was stolen, and about a quarter of it was recovered and returned to the owners. There were very few, possibly 20, station-house lodgers during the year, and a few meals were given them. The police notify and prosecute offenders against the health ordinances. The chief of police has the supervision of building permits. Special policemen are appointed by the mayor on occasions of circuses, fairs, etc., to serve as special patrolmen; they take orders from the regular police, who for the time being act as sergeants of special police districts. The cost of the force for 1880 was $4,420.

OMAHA,

DOUGLAS COUNTY, NEBRASKA.

POPULATION IN THE AGGREGATE, 1860-1880.

	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	.....
1860	1,883
1870	16,083
1880	30,518



POPULATION BY SEX, NATIVITY, AND RACE, AT CENSUS OF 1880.

Male	17,104
Female	13,414
Native	20,588
Foreign-born	9,930
White	29,678
Colored	*840

* Including 14 Chinese and 37 Indians.

Latitude: 41° 15′ North; Longitude: 95° 56′ (west from Greenwich); **Altitude: 947 to 1,094 feet.**

FINANCIAL CONDITION:

Total Valuation: $7,512,683; per capita: $246 00. Net Indebtedness: $227,578; per capita: $7 46. Tax per $100: $4 65.

HISTORICAL SKETCH.(a)

The spot on which Omaha is situated was visited as early as the year 1804 by Lewis and Clarke during their memorable expedition to explore the Louisiana purchase. Prior to that time it had been the site of an Indian village inhabited by the Otoes, whose descendants are now to be found on a little reservation in the southern part of the state. For nearly half a century after that date it was uninhabited except by Indians and an occasional trader or trapper; but soon after the discovery of gold in California, and the subsequent immigration across the plains to that land of promise, its attractive situation drew the attention of settlers on the left bank of the Missouri at the spot now called Council Bluffs, who waited with ill-concealed impatience until the Indian title to its productive acres should be extinguished.

a Hon. James W. Savage, judge of the supreme court of Nebraska, not only furnished nearly all the detailed information concerning the present condition of Omaha, but wrote the historical sketch of the city with which this report is introduced.

Early in 1854 negotiations with the Omahas and Otoes resulted in the signing of a treaty by which the aboriginal title to the land was extinguished and the way was opened for the establishment of the territory of Nebraska.

The bill organizing the territories of Kansas and Nebraska was the leading and most absorbing topic of the Thirty-third Congress. Its repeal of what is known as the Missouri Compromise gave it a national importance which it would not have possessed without such a clause, and the opposition to it was violent and bitter. After a prolonged controversy, however, the bill passed the Senate on the 4th of March, 1854, and the House on the 23d of May in the same year, and from that period the region about Omaha was, although unsurveyed, regarded as subject to pre-emption.

A few months prior to the passage of the organic act a steam-ferry company had been organized by residents of Council Bluffs under the name of the "Council Bluffs and Nebraska Ferry Company", for the purpose of establishing and maintaining a ferry across the Missouri river at Omaha. Immediately after the close of the fierce struggle, this company took steps to lay out a town at the western landing of their ferry, and the survey was completed in July, 1854. The town was laid out in 322 blocks, each block being 264 feet square and containing eight lots 66 feet in width by 132 in depth. The streets were given a width of 100 feet. To this prospective city was given the name of an Indian tribe, once the most powerful and wealthy in the region, whose lands adjoined those of the Otoes and reached the northern boundary of the city.

Francis H. Burt, of South Carolina, had been appointed by President Pierce the first governor of the new territory of Nebraska, and arrived at Bellevue, some 12 miles below Omaha, with his secretary, Thomas B. Cuming, of Iowa, on the 6th of October, 1854. Being taken ill, however, immediately on his arrival, he rapidly grew worse, until on the morning of Wednesday, October 18, 1854, he died at the old Presbyterian mission house at Bellevue. By virtue of his office, Secretary Cuming became governor, and at once entered upon the duties of his office.

Various points on the right bank of the river had by this time become clamorous for the territorial capital which it was the duty of the governor, in the first instance, to name. Governor Burt was supposed to have favored Bellevue; but Governor Cuming, in spite of determined and vigorous opposition, designated Omaha as the spot for the holding of the first legislature, and that place remained the capital until the territory became a state.

The growth of Omaha during 1856 and the earlier portion of 1857 was rapid. The spirit of speculation abroad over the whole country was speedily developed in that city. Money was made easily; corner lots commanded absurdly inflated prices; "wild-cat" banks, established without authority of law, and having no substantial basis of capital, were numerous; city scrip assisted in increasing an already abundant currency, and the future of the place looked very bright to the owners of real estate within its limits. In February of the last-mentioned year, the town, having reached a population of about 1,500, received from the legislature of the territory a charter of incorporation as a city.

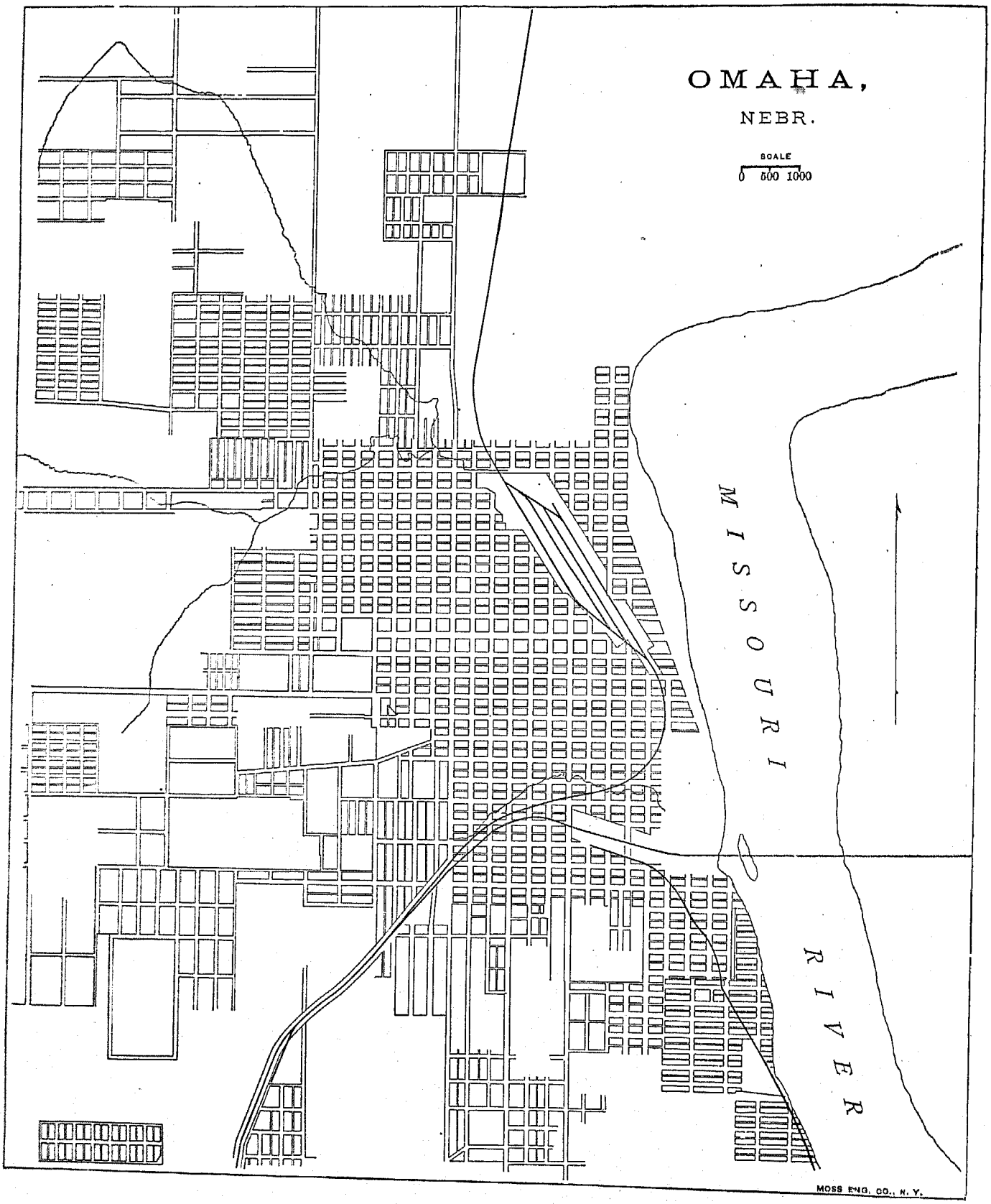
With the financial depression, however, of that year, which began with the suspension of the Ohio Life and Trust Company in New York city and rapidly spread over the entire country, a reverse overtook Omaha, which was far more severe in its consequences than any which could have befallen established towns in the East. Nearly every bank in the territory closed its doors, real estate was absolutely unsalable, business dragged heavily, and population actually decreased. Fortunately the discovery of gold in Colorado and the settlement of Denver in that state attracted general attention to that region; and Omaha, being on the line of travel, became an important outfitting point, obtaining a share of the trade which gave once more a cheerful and hopeful look to its affairs.

During all this time the title to the land on which the city was situated was still vested in the general government. Under the municipal act of Congress of 1844, the land covered by the site of Omaha was granted in two patents, one to John McCormick, as trustee, dated May 1, 1860, and the other to Jesse Lowe, mayor, dated October 1, 1860. These patents were in trust for the owners and occupants of the lots patented, and were by the trustees, from time to time, conveyed to such persons.

In 1862 Congress passed an act for the construction of a railroad to the Pacific ocean, and the initial point was fixed by the President on the western boundary of the state of Iowa, at a point opposite Omaha. Work on this road began December 8, 1863, and it was finished in about five years. Its construction gave an impulse to trade and business of all kinds in Omaha, which showed itself in a steady increase in population and a revival of speculation rivaling that of 1857. The census of 1870 showed a population of over 16,000.

The completion of the road, however, was followed by another fall in prices and a period of considerable depression. The expenditures necessary for the rapid pushing of the road had almost entirely ceased, and the city was found to have outgrown the demands of the still sparsely settled surrounding country. The financial difficulties which began in New York in 1873, moreover, were not long in reaching Omaha, and its population in 1875 was probably not much in excess of that of 1870. In the last-named year, however, the rapid increase of population in the state brought with it a demand for more commercial facilities, and Omaha began once more a vigorous growth, which has continued to the present time without material obstacle. Its population now exceeds 30,000.

The great width of the streets, while it has rendered their improvement expensive and slow, has in more than one instance prevented the spread of what might have become serious conflagrations. Though in the business portions of the city the houses were, until recently, mostly of wood, and though fires are not infrequent, they have never in a single instance spread beyond the block in which they had their origin.


OMAHA,
NEBR.
SCALE
0 500 1000
MISSOURI
RIVER
MOSS ENG. CO., N.Y.

The only serious fire which demands mention in a sketch of the city was the burning of the Grand Central hotel, a commodious and elegant edifice which, during the progress of repairs to the building in September, 1878, took fire and was burnt to the ground, occasioning a loss of perhaps $200,000.

Omaha is governed by virtue of a general law of the state of Nebraska incorporating all cities of more than 15,000 inhabitants as cities of the first class. It has 6 wards, and the common council consists of 2 members from each ward. The city officers consist of a mayor, treasurer, city clerk, marshal, and police judge, who hold their respective offices for 2 years. The city election takes place annually on the first Tuesday in April, and the terms of office of the councilmen have been so arranged that one from each ward is elected in each year.

The population of Omaha, besides Americans, comprises in a noticeable degree Germans, Scandinavians, Irish, and Bohemians.

OMAHA IN 1880.

The following statistical accounts give a clear idea of the present condition of the city:

LOCATION.

Omaha, the capital of Douglas county, Nebraska, is situated on the west bank of the Missouri river, opposite Council Bluffs, 18 miles by land above the mouth of the Platte, 125 miles west by south of Des Moines, and 150 miles by land, or about 250 by river, above Saint Joseph, Missouri. Judge Savage in his report gives the altitude of the lowest point of the city as 947 feet above sea-level; of the highest point, 1,094; of the court-house, 1,034. The track of the Union Pacific railroad on the high bridge across the Missouri, 52 feet above high water, has an altitude of 1,036 feet. There is a draft of water in the Missouri immediately in front of the city of about 30 feet. The banks frequently change, as well as the depth of water. Water communication is open with all river ports on the Missouri, Mississippi, and Ohio rivers.

RAILROAD COMMUNICATIONS.

The main line of the Union Pacific runs through Omaha on its way from Council Bluffs, just across the river, to Ogden, where it connects with the Central Pacific for San Francisco and the whole Pacific slope. At Council Bluffs this road connects with 5 others, viz, the Chicago and Northwestern, the Chicago, Rock Island, and Pacific, the Chicago, Burlington, and Quincy, the Wabash, Saint Louis, and Pacific, and the Kansas City, Saint Joseph, and Council Bluffs, which give Omaha the best of connections with all points to the East.

Omaha is the most northeastern point of the network of lines covering the southeastern part of the state, known as the Burlington and Missouri River Railroad in Nebraska. The branch of the road on which Omaha is situated connects with the trunk line of Oreapolis, giving communication with Lincoln, and so by various branches with Columbus, Central City, Kearney Junction, Indianola, Atchison, and Nebraska City. Omaha is the most southwestern point of the lines controlled by the Chicago, Saint Paul, Minneapolis, and Omaha company, the Omaha division of one of which lines, the Saint Paul and Sioux City, runs from Omaha to Blair and the North.

TRIBUTARY COUNTRY.

In so new a country as Nebraska it is not always easy to calculate exactly the region destined ultimately, when routes of trade and travel have been finally established, to become tributary to any given city. At present Omaha seems to be the natural outlet for an extensive region comprising most of the northwest portion of the state. But in a more restricted sense the country tributary to the city may be called Sarpy, Douglas, and the southern portion of Washington counties, comprising an area of about 25 miles in width from east to west, and 50 miles in length from north to south. This country consists of a gently rolling prairie, timbered along the streams, and nearly every acre of it susceptible of cultivation. It is well adapted to the growth of corn, hay, spring wheat, and small fruits. For 10 miles north, south, and west of the city the country is not so well settled as further west, the speculations of 1866 having withdrawn large areas from the market, which have been so long held that the wave of emigration has overleaped them and passed on to more easily purchased tracts.

Douglas county has an area of 215,000 acres, of which 40,000 and upward are under cultivation. The Platte river is its western boundary line, while the Missouri lies on its eastern borders. The Papillion and Elkhorn rivers run through the center; and numerous tributaries of these four rivers furnish a good supply of water. It has upward of 20,000 fruit trees, 30,000 acres of native and cultivated forests, and an abundance of lime and sandstone suitable for building material. At Waterloo, a thriving town in the western portion of the county, the Elkhorn river affords one of the best water-powers in the state. Sarpy county contains 142,258 acres of land, 43,531 acres of which are under cultivation. There are 50,000 fruit-trees in the county in good condition. It is well watered, and the west and southwest portions are supplied with extensive quarries of fine building stone, strips of timber, and fine springs of pure water.

TOPOGRAPHY.

Omaha, as has been said, is situated on the right bank of the Missouri river. Immediately on the shore is a strip of bottom-land, on which have been placed the machine-shops of the Union Pacific railroad, the smelting-works, and such other establishments as require large space or isolation. Some 1,200 feet back from the river the land rises abruptly about 60 feet, and there spreads out into a table, upon which is situated the principal business portion of the city. Half a mile further west the surface again rises, though more gradually, about 75 feet higher, and upon this elevation nearly all of the dwelling-houses have been erected. Here is met the gently undulating ground which extends over the greater portion of the city, and which, resembling the billows of the ocean, has been called a "rolling prairie".

The country rises toward the west and the north. The surface of each terrace, however, descends as it recedes from the river, until it reaches the foot of the next bluff. The natural drainage is therefore away from the river for some distance, and then both north and south until it reaches creeks which respectively bound the city on those sides, and which empty into the Missouri.

The soil of Omaha consists mainly of loess. This, at a distance varying from 25 to 75 feet, is underlaid by loosely compacted drift materials. Geologically speaking, the region has but recently emerged from the waters of the Loess age, and still exhibits as a whole many of the phenomena of a recently drained lake bed. Analysis of this loess gives the following results: Insoluble silicious matter, 81.28 per cent.; ferric oxide, 3.86; alumina, 0.75; lime, carbonate, 6.06; phosphate, 3.59; magnesia, carbonate, 1.28; potassa, 0.27; soda, 0.15; organic matter, 1.07; moisture, 1.09; loss in analysis, 0.59. It is said to absorb excessive rainfall like a sponge.

To the west of the city the rolling prairie is open; to the north and east along the banks of the river it is considerably wooded.

CLIMATE.

The highest recorded summer temperature is 105°; the highest in average years, 97.5°. The lowest recorded winter temperature is —22°; the lowest in average years, —13.5°. The mean summer temperature is 74.26°; the mean winter temperature, 23.36°; the mean annual temperature, 40.28°. The influence of such adjacent waters, marshes, and elevated lands as there are is imperceptible. The prevailing wind in summer is from the south, and in winter from the northwest. These winds, passing over a great expanse of level territory, doubtless increase the heat of summer and the cold of winter.

STREETS.

Total length of streets, 118 miles. None of them are paved except 0.4 mile, which has been paved with broken stone at a cost of $1 67 per square yard. The sidewalks are of wood of varying thickness, width, and condition, like those of most new western cities. There are only 2 miles of guttering, and this consists of irregular limestone blocks set on edge. "Generally the water wanders round at its own sweet will." By a city ordinance, owners of lots abutting on streets not occupied for business purposes have the right to inclose 14 feet of street, upon condition of planting trees in the space so inclosed. Lot-owners have almost universally availed themselves of this privilege. The streets devoted to residences are therefore generally bordered with shade-trees, usually the box elder, soft maple, or some species of rapid growth. Streets are constructed and repaired by contract. The annual cost of such work is about $11,500. The city's work has usually been done by contract, but the data are reported not sufficient to warrant any expression of opinion as to the relative merits of the contract and day systems. Neither steam stone-crusher nor roller is used.

The total length of horse-railroad track in the city is 5 miles; total number of cars, 10; of horses, 70; of men employed, 20; of passengers carried during the year, 495,000; the rate of fare is 5 cents for any distance.

WATER-WORKS.

A contract for water-works has just been concluded and work has been begun; hitherto the only sources of supply have been cisterns and wells.

GAS.

The gas-works are not owned by the city; the daily average production of gas is 30,000 feet; the charge per 1,000 feet is $3 50; there are 160 street lamps, and the city pays $27 50 per year for each.

PUBLIC BUILDINGS.

The building used for city-hall purposes, meetings of city council, mayor's office, etc., is not owned by the city. There are, belonging to the city, only 3 wooden engine-houses, of trifling value, perhaps $2,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are three public parks, with a total area of 85.5 acres: *Hanscom Park*, containing 73 acres, is situated in the southwestern part of the city, about a mile from the center of business, is heavily rolling, and is covered

with a good growth of natural trees. It was presented to the city on condition that the city should spend $5,000 per year for five years on it. Its designer was George Smith, esq. The two smaller parks have cost nothing, having been reserved at the laying out of the city. The parks are controlled by the city council. The city ordinance in regard to Hanscom park provides, among other things, that huckstering and the sale of alcoholic liquors shall not be allowed in it.

PLACES OF AMUSEMENT.

There are three theaters, seating, respectively, 900, 650, and 250. They pay an annual license to the city of $100. There are five or six concert-halls and lecture-rooms of various sizes. There are three concert- and beer-gardens, viz, Bohemia hall, with a seating capacity of 450, built in 1870; Metz garden, seating 750, constructed in 1875; and Bauman's garden, seating 1,000, constructed in 1872. They cost $5,000 each.

CEMETERIES.

No report on this subject was received.

MARKETS.

There are no public or corporation markets, and no standing-ground is used by farmers' and hucksters' wagons, except by those of the venders of hay and wood. Certain portions of wide streets in the center of the city are set apart by a city ordinance for market-stands, but farmers generally dispose of their produce, except hay and wood, to green-grocers who keep retail shops. The city marshal is made the conservator of the market. Any person occupying any of this space set apart must make his stand in the center of the street, in such manner as not to interfere with public travel, and a space at least 20 feet wide must be kept free and unobstructed on each side of the street and contiguous to the sidewalk.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief health organization of Omaha is the board of health, consisting of the mayor, the president of the city council, and the city marshal. The mayor is president of the board. Its duties consist in having charge of the sanitary condition of the city, adopting such regulations as are consistent with the lawful exercise of its powers concerning the public health, nuisances, sources of filth, and causes of sickness, and taking prompt and efficient measures to prevent the introduction or spread of contagious diseases. Its annual expenses are about $240, incurred for current expenditures and the salary of a secretary. The ordinance makes no provision as to its expenditures either in the presence or the absence of epidemics. It is the duty of the city physician to take charge of all persons suffering from infectious, contagious, malignant, or epidemic diseases, to examine into all nuisances, sources of filth, and causes of sickness within the city, and to report the same weekly, or oftener if required by the board, together with the number and character of cases of diseases, contagious, malignant, etc., that may come under his treatment. In case of epidemics the board may establish such temporary hospitals or pest-houses as the emergency may require. The city does not own a pest-house. None of the board have police powers, except the president in his capacity as mayor and magistrate. Particular inspections are made only as nuisances are reported. If the nuisance really exists the city marshal orders it abated. The board meets monthly at the call of the president. There is no special practice concerning the inspection and correction of defective house-drainage, privy-vaults, cesspools, sources of drinking-water, defective sewerage, etc. These things and the conservation and removal of garbage the board takes cognizance of only as nuisances are apparent or are reported. No dead body is allowed to be buried without a permit from the secretary of the board.

INFECTIOUS DISEASES.

Small-pox patients are isolated in a pest-house; scarlet-fever patients, when the disease is of the malignant type, are quarantined at home. Except in case of these two diseases the board takes no cognizance of the breaking out of contagious diseases in the public schools. Vaccination is not compulsory, nor is it done at the public expense.

REPORTS.

The ordinances provide that the secretary of the board shall register all births and deaths, but no registry of diseases is kept, further than that of contagious diseases mentioned under the city physician's duties. The board reports to the city council as often as necessary, and at least once a year. Their reports are not published. The general health of the city is said to be remarkably good.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are improved—never cleaned—by the city, and but rarely by private abutters. It is reported that the city has found it impracticable to do this. When it has been done at all it has been by hand.

The sweepings are deposited on the river-bottom, whence they are washed into the river by rain and overflows. Efforts are being made for the construction of pavements, and these, with the water from the new water-works, are expected to produce a speedy improvement in this matter of street-cleaning.

Removal of garbage and ashes.—Garbage is removed by householders. It is finally disposed of in the Missouri river. Ashes are disposed of in the easiest way possible, there being no uniform practice on the subject. Doubtless the carelessness in the treatment of garbage is injurious to health, but it is probably less so than in most cities, on account of the dryness of the climate. Judge Savage says: "All these things will be speedily changed. Thus far the city has grown too fast for public improvements to keep up."

Dead animals.—A city scavenger removes dead animals to phosphate works, where they are disposed of. No complaints have been made of the system. The animals are removed as soon as discovered, and the rendering works are far enough from the city to prevent any unpleasant effects from the processes.

Liquid household wastes.—Chamber, laundry, and kitchen slops are all disposed of in the same way. As sewers have not yet been constructed to any extent, very little of the liquid household wastes goes into them. Most of it goes into dry wells or cesspools on the premises, which are mostly porous and are not provided with overflows. They seldom receive the waste of water-closets.

Human excreta.—Houses built prior to 1880 depend on privy-vaults. Few, if any, of these vaults are nominally water-tight. Scavengers must at no time cleanse out any cesspool or vault without first procuring an order or license from the board of health specifying the manner, means, and time for such cleansing.

Manufacturing waste.—There is neither practice nor regulation on this head.

POLICE.

The police force is appointed by the mayor, with the consent of the city council. The chief executive officer is the city marshal. He receives a salary of $1,200 per annum. He has the direction and control of the police force while on duty. The rest of the force consists of a deputy marshal and 8 patrolmen, who receive $840 per annum each. Their uniform consists of a double-breasted frock coat of blue cloth and a blue cap. The men provide their own uniforms. Each man carries a billy, a revolver, and Philip's patent police nippers. Each serves 12 hours a day and patrols four blocks, about 400 feet square. In 1880 there were 867 arrests, the principal causes being drunkenness, larceny, assault and battery, disorderly conduct, and prostitution; $3,000 worth of property was stolen, of which $1,500 was recovered and returned to the owners; there were 100 station-house lodgers, against 130 in 1879; a few free meals were given them, at a total cost of $14. Special policemen are appointed by the mayor and council at the request of any firm or corporation, to do service in or about the business or premises of such firm or corporation. They have the powers of regular police in the discharge of their duties. In 1880 the force cost about $10,000. The mayor in his annual report, presented April 13, 1880, said: "It is a remarkable fact that during the past year no case of the commission of a capital crime has occurred in the city, nor has there been scarcely a case of street robbery or garroting." Of the present quarters in the city prison, the same document says: "They are unfit to be the recipient of the vilest prisoner. * * * To keep prisoners confined in their present rooms during the summer would be an act of inhumanity."

FIRE DEPARTMENT.

The Omaha fire department has 14 paid men, 12 horses, 4 engines, 2 houses. In the year ending April, 1880, there were 43 alarms. By far the most disastrous fire was that of Boyd's packing-house, the loss in that instance being $137,000. The total loss by fire was $175,340; of this, $145,890 was covered by insurance. The expenses for the year were as follows: Salary of the chief, $1,200; expenses of three engine companies, $13,252 56; hook and ladder, $1,585 52; fire alarm, $108 22; general expenses, $456 40; new engine, $4,400; lot of land, $676. Total, $21,678 70.

The value of the total amount of property in charge of this department is estimated at $70,201.

SCHOOLS.

The management of the city public schools is, under a state law creating a board of education, composed of 12 members, 2 from each ward, elected by the people for a term of 2 years. The course of instruction is thoroughly graded, offering to the children of the city a course of free instruction covering a period of 12 years. To supervise and manage the detail working in the schools, the board of education annually elects a superintendent. The principals of the several schools and teachers of the various grades are elected annually. Liberal salaries are paid to all, and excellent services are required.

The high-school building occupies the most prominent position in the city. It has a beautiful campus of ten acres, which is well known as "Capitol hill". The building is 4 stories high, containing 17 school-rooms, with an average seating capacity of 55 pupils to each room. There are also in this building 4 large recitation-rooms, an office room, library, and apparatus rooms connected with the high school. This building was erected in 1872 at a cost of $200,000. It is heated throughout by furnaces and hot-water coils of pipe, and is ventilated by the Rattan system. Of the 9 other buildings, 5 are of brick and the rest of wood.

The entire school population of the city between the ages of 5 and 21 years is 7,285, an increase in one year of nearly 900 children. The entire enrollment in the public schools for the year 1879–'80 was 3,517, an increase of 600 in one year. The average daily attendance was 2,477. The cost of maintaining the public schools for the year ending August 30, 1880, for supervision, teachers' salaries, incidentals, janitors, fuel, and repairs, was $69,573 05.

Of the private institutions, the most noticeable is Creighton college, conducted under Catholic auspices. The building is a large and beautiful brick structure, occupying a commanding position. It has a frontage of 50 feet, and is 125 feet deep. The present building was completed in January, 1879, at a cost of $63,000. It is well furnished throughout, and is arranged with an eye to comfort and convenience. The estimated cost of the building when completed according to the plans, by the addition of two wings, will be about $200,000. The college was opened for the reception of pupils in September, 1878. There were 140 pupils reported on the rolls, and this number has steadily increased, until now there are nearly 200 in attendance. Although it is a free Catholic institution, students of other religions are not excluded, and hence among the pupils there are found quite a number of Protestants.

There are other Catholic schools, with a total attendance of about 450. Brownell hall, a seminary of the Protestant Episcopal church for young ladies, has an attendance of about 100 students. Saint Barnabas school has an attendance of about 60.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Omaha for 1880, being taken from tables prepared for the Tenth Census by Philip Andres, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	Average number of hands employed.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries	154	$1,835,800	1,466	64	158	$726,918	$2,527,476	$4,250,866
Blacksmithing (see also Wheelwrighting)	7	14,550	11	.....	.....	6,240	6,225	20,575
Boots and shoes, including custom work and repairing	9	22,650	29	.....	.....	15,930	12,550	38,760
Bread and other bakery products	5	24,800	36	3	4	17,050	61,300	103,400
Brick and tile	8	35,100	76	.....	45	42,960	30,730	101,771
Carpentering	10	12,500	77	.....	.....	26,900	57,760	109,760
Clothing, men's	4	26,400	28	.....	1	21,918	26,950	55,268
Cooperage	5	23,000	41	.....	.....	25,500	48,387	78,600
Foundery and machine-shop products	4	43,000	77	.....	.....	39,543	26,748	80,000
Furniture	3	8,650	5	2	.....	2,700	10,350	17,800
Jewelry	3	40,000	25	.....	2	14,500	105,000	210,000
Liquors, malt	4	285,000	93	.....	.....	37,595	133,117	259,460
Marble and stone work	3	4,400	7	.....	.....	2,100	3,800	11,100
Masonry, brick and stone	6	25,500	140	.....	12	40,200	65,036	129,000
Painting and paperhanging	7	30,750	64	.....	5	29,515	34,239	88,000
Printing and publishing	9	145,750	127	22	51	112,380	112,300	284,461
Saddlery and harness	3	68,950	21	.....	1	11,713	33,900	50,400
Slaughtering and meat-packing, not including retail butchering	5	240,200	147	.....	1	49,420	700,250	991,790
Tinware, copperware, and sheet-iron ware	7	32,000	51	.....	.....	22,150	49,300	94,000
Tobacco, cigars and cigarettes	8	35,450	43	2	14	28,267	51,200	113,194
Wheelwrighting (see also Blacksmithing)	4	5,700	7	.....	.....	4,772	3,830	14,572
All other industries (a)	40	693,450	361	35	22	175,565	864,478	1,428,955

a Embracing billiard tables and materials; boxes, wooden packing; brass castings; brooms and brushes; carpets, rag; carriages and wagons; clothing, women's; coffee and spices, roasted and ground; drugs and chemicals; dyeing and cleaning; fertilizers; flouring and grist-mill products; furs, dressed; iron and steel; liquors, distilled; looking-glass and picture frames; lumber, sawed; mineral and soda waters; oil, linseed; paints; patent medicines and compounds; photographing; plumbing and gasfitting; rubber and elastic goods; safes, doors, and vaults, fire-proof; shirts; show-cases; upholstering; vinegar; watch and clock repairing; and wirework.

From the foregoing table it appears that the average capital of all establishments is $11,920 77; that the average wages of all hands employed is $430 63 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is $21,847 67.